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Our Working World

Regions of the United States



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Regions of the
United States





oww Our Working World

Regions of the United States

by Lawrence Senesh

Professor of Economics

University of Colorado

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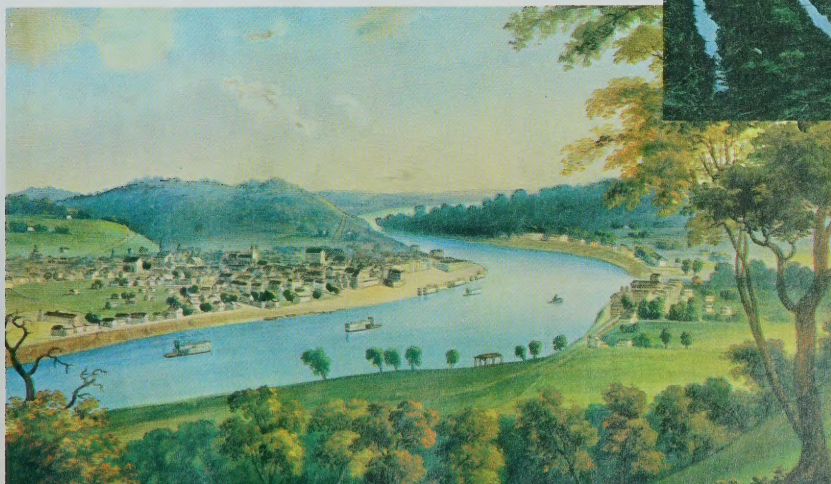
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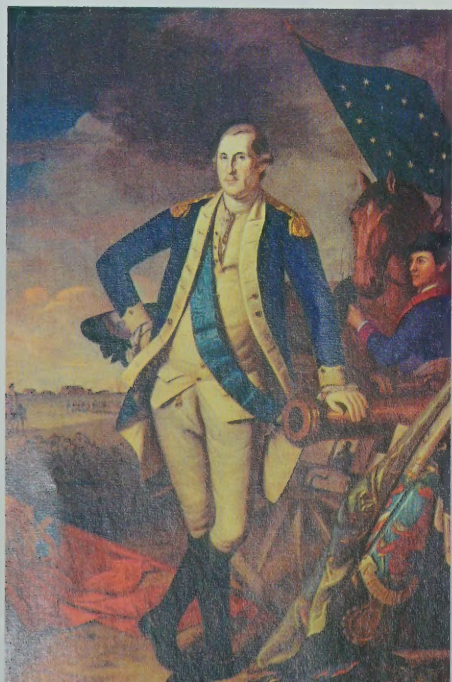
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HOW TO USE THIS BOOK

You don't need a key to open a book. You can read it any way you wish. But there are "keys" to better reading.

Seeing the structure is a key. The Table of Contents shows you the structure. It shows you the big ideas.

This book is built upon big ideas about the regions of the United States. The parts of this book make a pattern. What are these parts?

Introduction

The introduction is a guide. It includes the major ideas about regions. Use it for reference.

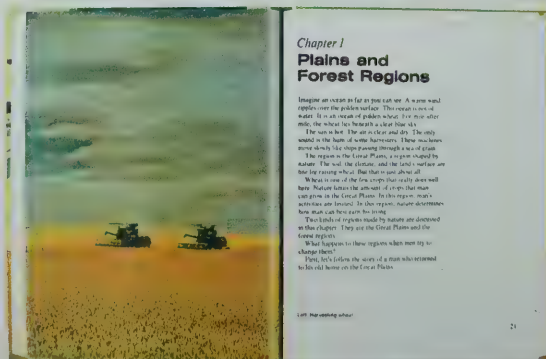
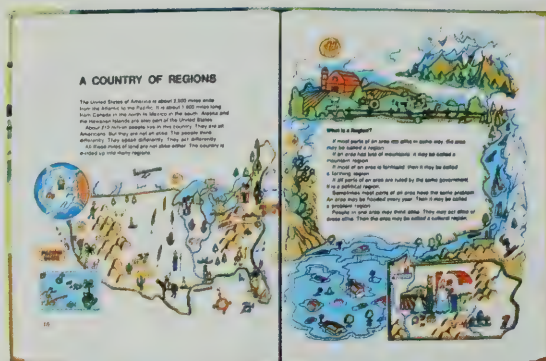
Units

The book has five units. Each unit deals with a kind of region. The unit begins with a picture. It sets the scene for the unit. A unit introduction gives you a preview of the unit.

Chapters

Each unit contains two or three chapters. Each chapter deals with a region or a type of region.

There are signposts for the important ideas in a chapter. The signposts are the headings. The headings are an outline of important ideas.



The photographs and drawings in each chapter will help you see the region. At the end of each chapter there is a photo essay. It gives a close-up view of an important activity or way of life in the region.

There are charts and maps in each chapter. Some charts use numbers to help you understand the region. Others show you how something works.

Each chapter contains maps of the region. At the end of the book there is an Atlas section. It includes six maps of the United States. Use this section often as you study.

A set of questions ends each unit. The questions ask you to think about the most important ideas in the unit.

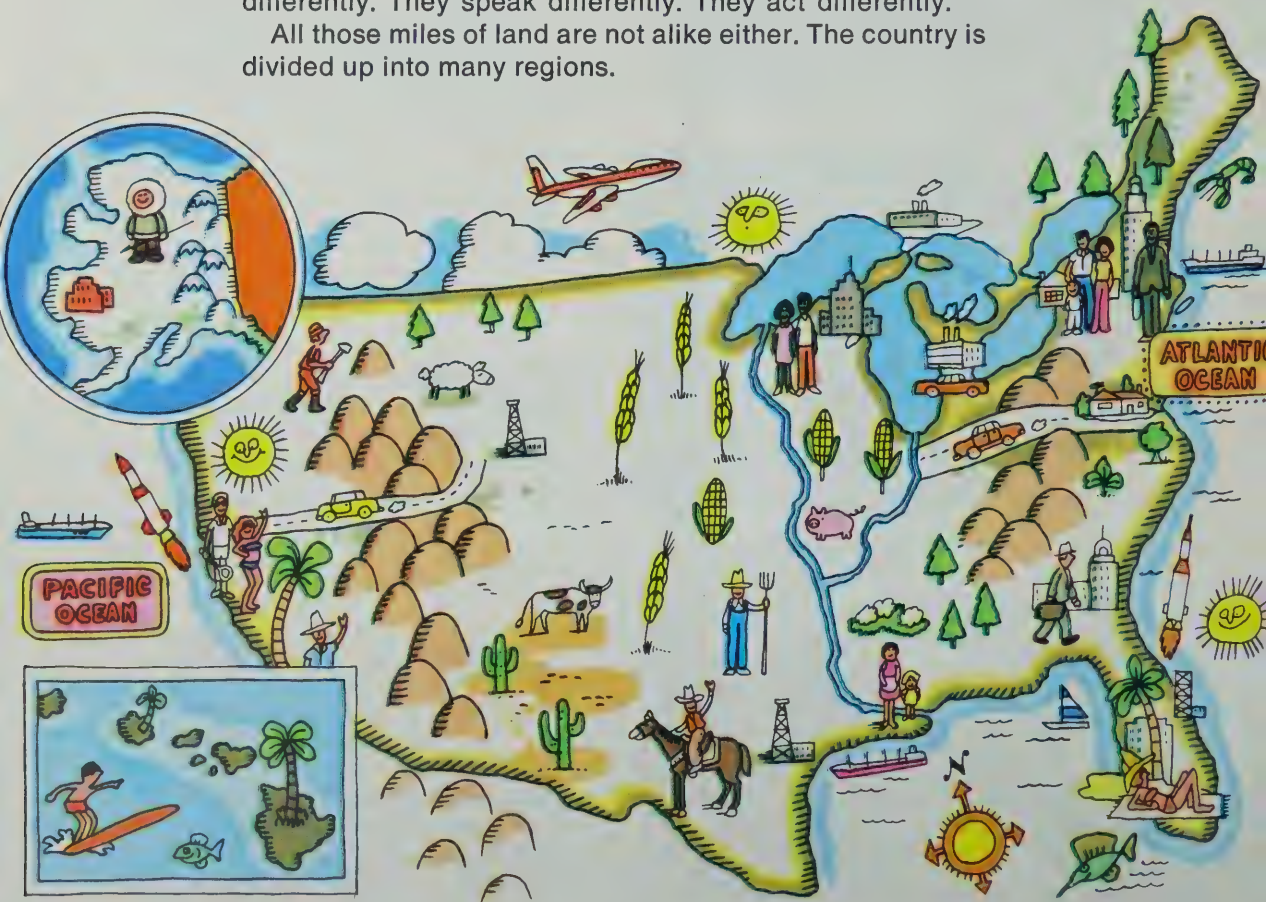
A glossary of special terms is found near the end of the book. Use the glossary to aid your reading.

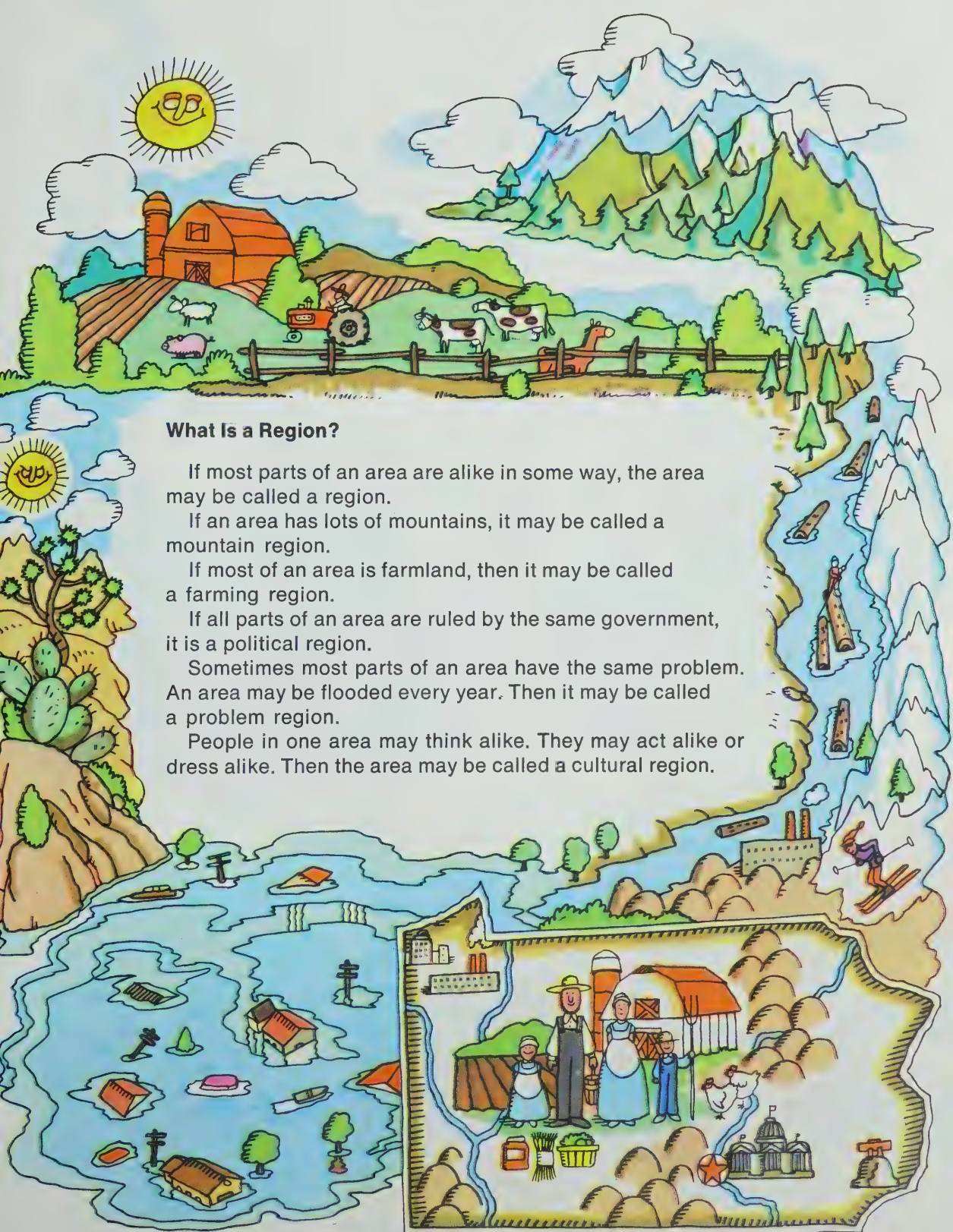
A COUNTRY OF REGIONS

The United States of America is about 2,500 miles wide from the Atlantic to the Pacific. It is about 1,600 miles long from Canada in the north to Mexico in the south. Alaska and the Hawaiian Islands are also part of the United States.

About 210 million people live in this country. They are all Americans. But they are not all alike. The people think differently. They speak differently. They act differently.

All those miles of land are not alike either. The country is divided up into many regions.





What Is a Region?

If most parts of an area are alike in some way, the area may be called a region.

If an area has lots of mountains, it may be called a mountain region.

If most of an area is farmland, then it may be called a farming region.

If all parts of an area are ruled by the same government, it is a political region.

Sometimes most parts of an area have the same problem. An area may be flooded every year. Then it may be called a problem region.

People in one area may think alike. They may act alike or dress alike. Then the area may be called a cultural region.

Regions Have Boundaries

Every region has boundaries. They separate it from other regions.

Some boundaries are clear and sharp. Each state in the United States has clear boundaries marked on the map. They are also marked on the road to tell motorists when they pass from one government region to another.

Some regions, however, have fuzzy boundaries. One region fades into another. For example, there is no sharp line between cold regions and hot regions. But the climate slowly grows warmer as one travels from north to south.

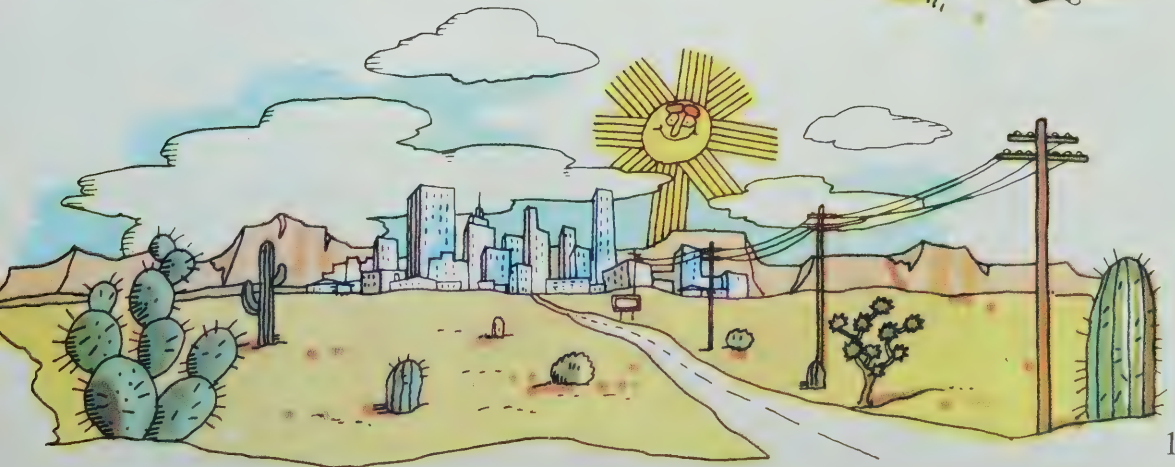
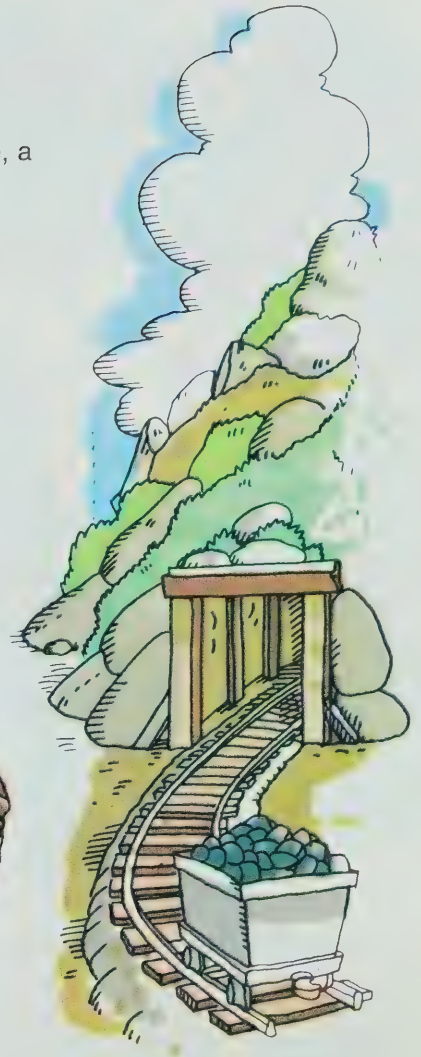
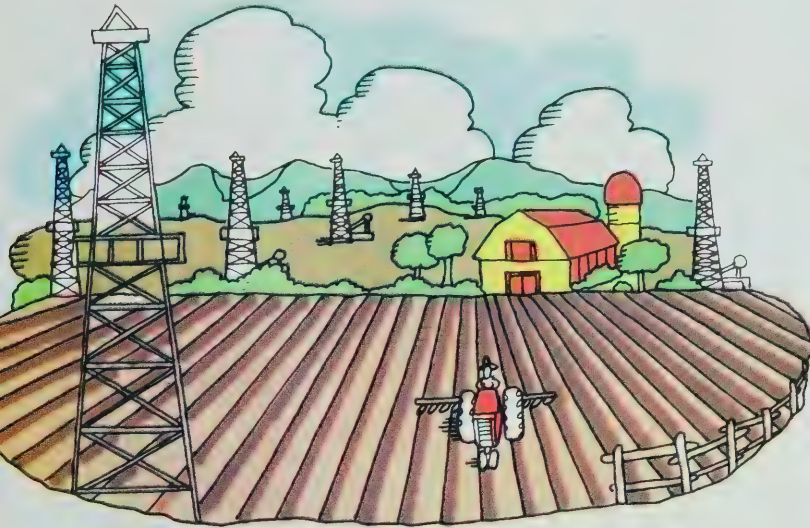


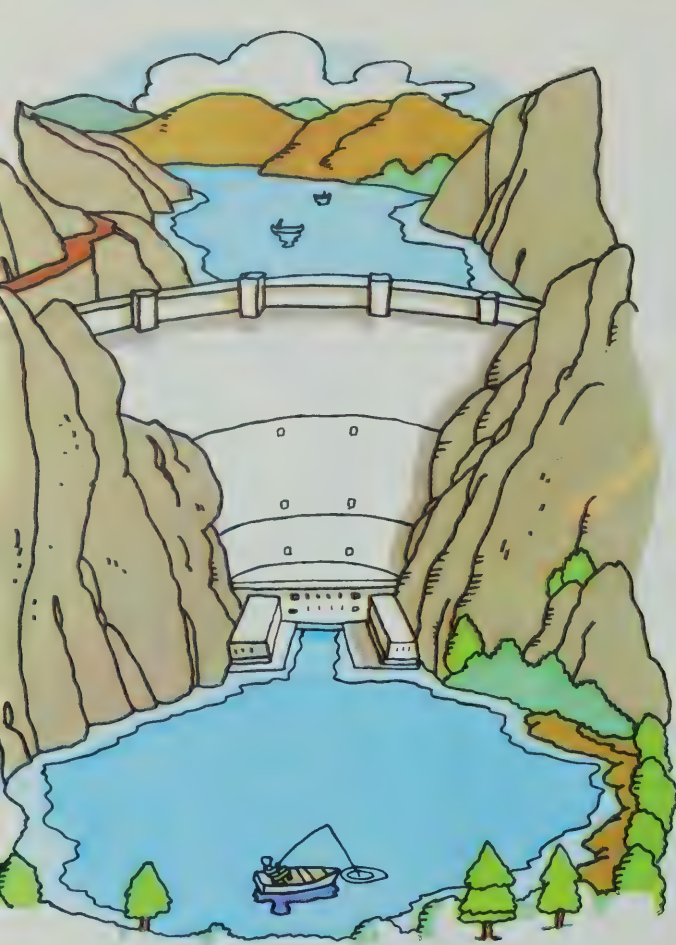
Regions Made by Nature

The United States is made up of many natural regions. Natural regions are regions made by nature. For example, a desert region is a natural region.

Regions Made by Man

Other regions have been made by man's work. Cities have sprung up in the desert and on the prairies. Farm regions have been turned into oil fields. Man has changed mountain regions into mining regions.

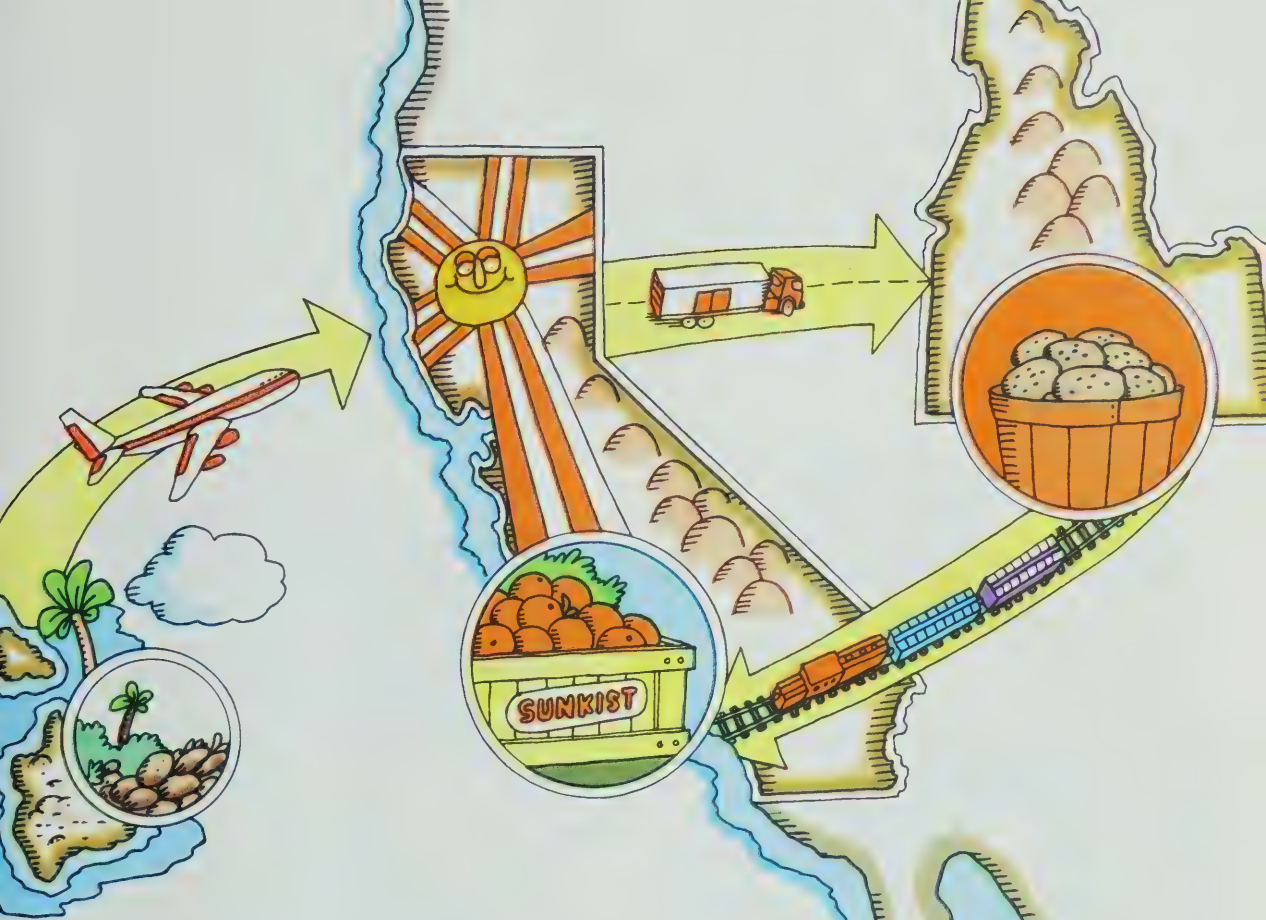




Changing Nature's Regions Can Be Dangerous

Sometimes changes made by man improve a natural region. For example, a dam prevents flooding. However, there are some natural regions that man cannot change as he wishes without paying a heavy price. In these regions man's work is limited by nature. By trying to get more out of it, he may get nothing. Men wanted more lumber so they cut down all the trees from the hillsides in the forest regions. But when it rained, the soil washed away. There were no tree roots to hold the soil firm. The hillsides became mud slides. The rains rushed down the bare hillsides and flooded the lowlands. Therefore man's work in regions like this must be limited. Some of the trees should have been left to hold the soil and keep the area beautiful.





Regions Specialize

People in a region do not try to produce all the goods and services they need. They try to make the best use of the resources they have. They try to produce one special thing which the region has or makes best. In other words, the region specializes. For example, California produces Sunkist* oranges. They are sold all over the United States.

The people of Idaho grow potatoes. It is their best crop. The soil and climate are perfect for it. So the people there specialize in growing potatoes.

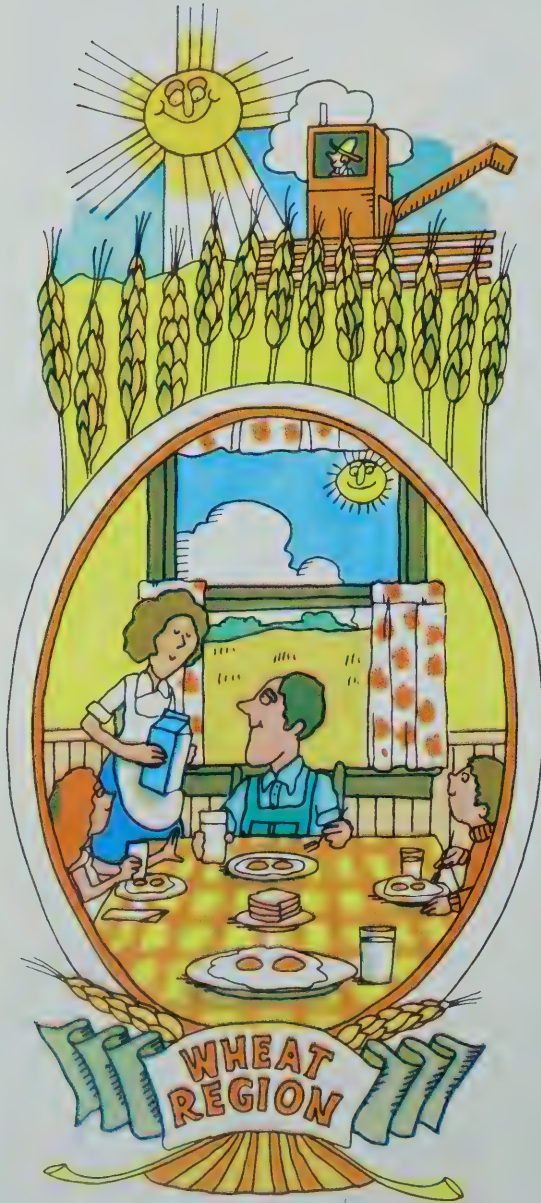
There is a nut that grows very well in Hawaii. It is called the macadamia nut. Hawaii ships these nuts to people all over the world. It is a Hawaiian specialty.

Each region should make the best use of what it has. Then the whole country benefits. If regions do not specialize, the whole country is poorer.

* Sunkist is a trademark of Sunkist Growers.

Regions Are Dependent on Each Other

Regions need each other. One region raises wheat. But it depends on another region for dairy products like eggs and milk. The wheat region and the dairy region trade with each other.



Regions Overlap

Sometimes one area may be part of two regions. For example, the state of West Virginia is a political region. That is, all of West Virginia is governed by the same government in the state capital of Charleston. But West Virginia is also part of the Appalachian Region. The Appalachian Mountains cover most of the state. So the people of West Virginia belong to two regions: a political region and a natural region. One area can be part of two or even more regions at the same time.

In this book we will study the regions of this country. What are the regions like? How do people live in them? What problems do they have?

We will discover those regions where man has been successful in changing regions to suit his wants and needs. We will also discover those regions where he has been unsuccessful.







Unit One

REGIONS MADE BY NATURE

In regions made by nature, man's work is limited. It is limited by the forces of nature. The soil, the climate, the land's surface, and the land's minerals limit man's work. They determine how man will make his living. They determine whether he is a miner, a farmer, or a factory worker.

Nature's regions cannot be changed very much. If man tries to go beyond the limits, he may ruin the region. Then he will lose the benefits of the region.

Let's look at some regions made by nature.

Left: The Great Plains, Eureka, Kansas



Chapter 1

Plains and Forest Regions

Imagine an ocean as far as you can see. A warm wind ripples over the golden surface. This ocean is not of water. It is an ocean of golden wheat. For mile after mile, the wheat lies beneath a clear blue sky.

The sun is hot. The air is clear and dry. The only sound is the hum of some harvesters. These machines move slowly like ships passing through a sea of grain.

The region is the Great Plains, a region shaped by nature. The soil, the climate, and the land's surface are fine for raising wheat. But that is just about all.

Wheat is one of the few crops that really does well here. Nature limits the amount of crops that man can grow in the Great Plains. In this region, man's activities are limited. In this region, nature determines how man can best earn his living.

Two kinds of regions made by nature are discussed in this chapter. They are the Great Plains and the forest regions.

What happens to these regions when men try to change them?

First, let's follow the story of a man who returned to his old home on the Great Plains.

THE BREADBASKET OF AMERICA

I was born down in the southwest corner of Kansas. It's right in the middle of the Great Plains. But in 1935, when I was seven, my dad packed up the family and we left. We moved to California. I never went back. This summer, however, I had two months' vacation. So I decided to visit the region where I was born, the Great Plains.

As I drove into Kansas, I could see just one thing. Wheat! Thousands of acres gleaming like gold in the sun.

People call this region the Breadbasket of America. It really is. Farms here produce two out of every three bushels of wheat grown in our country.

First, I visited my Uncle Fred's farm. I asked him why he stayed here on the Plains after we left.

"I can't really say. All I had was 320 acres of dust. Yet I just couldn't leave. There's something special about this country."

"What do you mean?" I asked.

"Well, around here a traveler sees just flat land and some sand hills now and then. In some places north of Kansas, he sees rocky bare country. Those are the badlands. If he's in the south, he sees a good deal of cotton and sorghum growing. But on the Plains he sees mostly fields of wheat and alfalfa

and herds of beef cattle. But there's more to it than the land and what we grow.

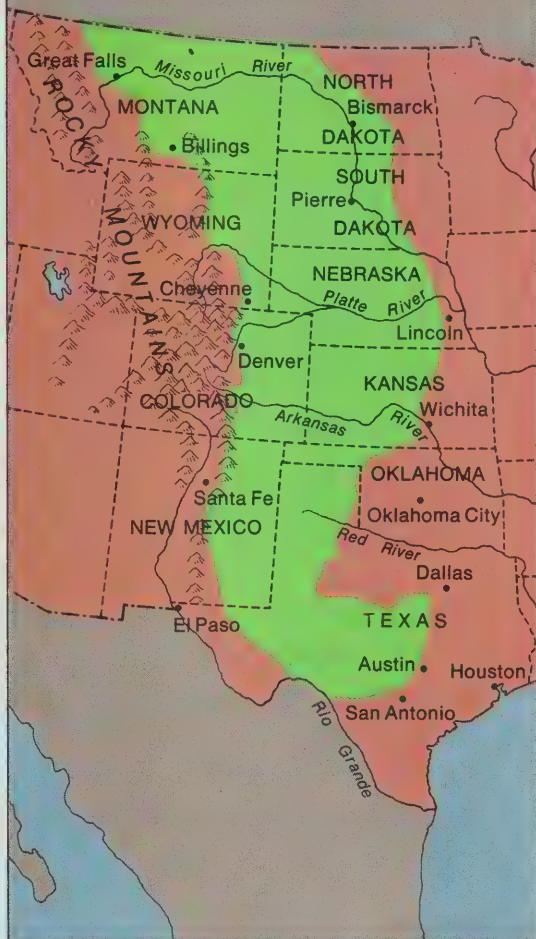
"I guess I'm used to open spaces. Maybe that's the main thing. There is nothing to close in on me here. A plainsman likes to see for miles. Does that sound silly to you?"

"No, it doesn't sound silly at all. Not the way you tell it. But I do wonder how you can think so much of a place where the land gets as dry and hard as this does."

When Will It Rain?

"Oh, it's not always so dry. Of course, it's drier than it is in states east of here. Some years, though, we get as many as 30 or 35 inches of rain. That's enough to grow a fine crop of wheat. In other years, well, there's not so much. If we don't get more than 14 or 15 inches of rain, we're in trouble. Our real problem is, we don't know what to expect. We might have five or six good years, with rain coming at just the right time. Then the old Plains weather turns on us. It might be dry for three or four years. Then all we can do is hope and pray. At times like that, most of us would give our last nickel to any phony rainmaker who came along."

The Great Plains Region



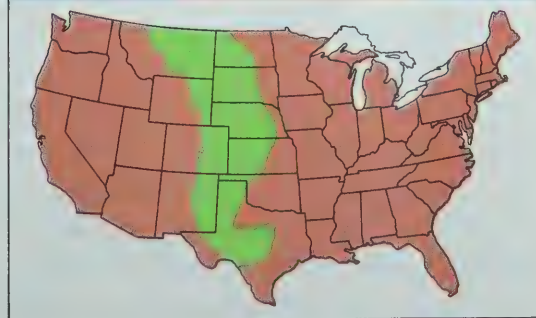
How Much Rain Is Needed?

40 inches or more	20 to 40 inches	5 to 20 inches	5 inches or less
Rice Fruit	Corn Barley Oats	Wheat Rye Millet	Cactus Desert Grass

Good Years and Bad Years

After dinner, Mr. Jackson, one of Uncle Fred's neighbors, came to visit. In San Francisco he would hardly be called a neighbor. There, hundreds of people may live in one apartment building. This neighbor lived eight miles away. But out here, a man is a neighbor if he lives within twenty miles of you.

Mr. Jackson and I talked about the years of drought. "The really bad years began in 1933," he told me. "We hadn't done badly before then. I guess we thought we'd never have rain problems



again. But we were foolish. We forgot too quickly.

"My father tried to warn me. He remembered the terrible dry years around 1890. My father settled here in 1886. He claimed 160 acres of land. A lot of people did that. If they stayed on their claim for five years and built a house on it, they got the land free. Some of the houses were pretty shabby, but the settlers managed to live in them.

"But we forget easily. The plainsman remembers the good years. Sure, there were many good ones to remember. We had about twenty years of pretty fair rainfall and good wheat crops. About that time, lots of people were coming from all over the world to live in the United States. Most of them settled in the cities. All of them needed wheat for bread. In 1914, a war started in Europe. People in Europe needed wheat. They couldn't fight a war and produce food at the same time. The Plains farmers got good prices in those years.

"Then the war ended. Europeans didn't need American wheat any more. We were growing more than anyone wanted to buy. So prices fell. We tried other crops. We tried alfalfa and soybeans. But they didn't grow well. Nature doesn't offer many choices here. All we could grow was wheat. In most places on the Plains, wheat makes you

or breaks you. That time it broke us. And on top of that came the Dust Bowl."

"You mean the dust storms?" I asked.

"Yes. First, we had weeks and months without any rain. But we kept on plowing and planting. We plowed away the grass. There was nothing to hold the soil down."

Life in the Dust Bowl

"Then the wind came. It swooped down and picked up that Plains dust by the acre. We thought that half the soil of Colorado and New Mexico was being dropped on us. At the same time, half of western Kansas and Oklahoma was swept up by the wind. Dust was scattered from Missouri to New York. Every day the sun hung like a dim orange ball in a brown night. It was like living in a bowl of dust.

"I used to tie a handkerchief over my face to run from the house to the barn. That way I wouldn't choke to death on the dust. We had dust storms in 1933 and 1934. But the 1935 storm was the worst. No wheat grew that year. I hardly knew my farm. It looked like a desert.

"The dust bowl days taught the Plains farmers some respect for nature. We're better farmers now. We're better because we know more about our soil and our weather. We've learned to work with nature as much as we can. We



In the 1930s, a terrible drought hit the Plains. Dust covered everything. Nothing could grow. Many men left their farms and moved West.

know we can't fight it. For one thing, we've learned how to make good use of the rain we get. Now we usually don't plant wheat on all our land in any one year."

Strip Farming Helps the Soil

"From the air, you can see a pattern of strips across each field. One strip is for wheat. Another strip is lying fallow. *Lying fallow* means just left alone. We don't even plow it. The next year, we change around. We grow wheat on the fallow strip and fallow the other.

"In this part of the country, the soil usually needs two years of rain to grow wheat well. The fallow strip can store a good share of one year's rainfall. Only a thin layer of fine soil on the surface dries out. This layer is like a blanket. It seals the moisture in the ground.

"Why do we do it in strips? If we fallowed large areas at a time, that

blanket of fine soil would blow away in a dust cloud."

"Mr. Jackson," I asked, "if a farmer doesn't use a large part of his farm each year, how can he grow enough to make a living? I never heard of a factory owner using only half his factory to produce goods each year."

"That's true. But size makes the difference. A farmer with 160 acres can't make a living if 60 or 80 acres of his ground lie fallow. Many of the men with small farms have sold their land and moved away. Men who stay are buying more land to make bigger farms. With 800 or 1,000 acres, you can let many of them lie fallow.

"Of course, we don't farm 1,000 acres the way we used to farm 160 acres. We have machinery now."

Machines Help Farmers

"Thirty-five years ago, a Plains farmer had only a little machinery. I remember when one farmer owned one piece

of machinery and the next farmer owned another. The neighbors helped each other, especially at harvesttime. We moved from farm to farm harvesting grain.

"We used to trade with each other, too, when we had no money. I was a pretty good carpenter. I did a lot of carpentry work to pay a neighbor for the use of his machinery.

"But farm machinery is expensive. A giant *combine* [KOM-bine] can cut the wheat and thresh it at the same time. Most farmers can afford only one or two combines. And it takes a fleet of combines to harvest a large farm. Most farmers hire *custom cutters* to do the work. These are men who own five or six big combines. They begin harvesting wheat in Texas, where it ripens earlier than here. Then they move north following the ripening wheat to Canada. Afterward, they put their combines on trucks and carry them back to Texas.

"Five or six of those huge machines together can harvest a thousand acres of wheat in about three days. In this way one farmer can produce enough to feed forty-five people in the city.

"Well, I must go. Tell your dad hello for me. Tell him I remember him well."

I was glad I had come back to visit this place where I was born. Already I was learning how nature had shaped

it. I was learning how the people had come to respect nature and her power. I wanted to learn more. So I read some of Uncle Fred's books about the Plains.

The Web of Life

The great grasslands were once the home of many different living plants and animals. There were jackrabbits, antelope, buffalo, prairie dogs, snakes, birds, and coyotes. Nature did not just throw these plants and animals together to take up space. Each had a special job to do. Each depended on the other for food. Together they made up a community, or network, of wild animals and plants.

The community had to feed all its members. The energy from the sun is stored in growing plants and grasses. Kangaroo rats eat the grass, and the sun's energy is turned into fat. The rats, in turn, are eaten by young burrowing owls. The energy is thus turned into bird fat. The young owls are eaten by snakes. The snakes are eaten by giant birds.

This network of life looks something like a pyramid. Each kind of animal lives off the animal beneath it in the pyramid. Each animal, in turn, is food for the animals above it in the pyramid.

If the community is in good balance, there will always be enough left to have babies and keep the life going.



Plains Indians lived in small, simple villages like this. When the buffalo herds moved, the Indians folded their tepees and followed.

HOW MAN CHANGED THE GREAT PLAINS

The Indians

At first, no Indians lived in the heart of the Great Plains. They knew that the land was difficult to live on. They went into the Plains only when they had to hunt buffalo or antelope. It was hard because they had to go on foot. They never saw horses until the Spanish explorers brought them into the Great Plains.

The Indians did not live in villages. They did not farm, so they did not plow up the grassland. The Indians were wanderers like the buffalo. The buffalo went where the grass grew. When the buffalo moved, the Indians followed.

On the Great Plains, the buffalo lived off the great acres of buffalo grass. The Indians depended on the buffalo. The buffalo was the link between the sun's energy stored in the grass and the Indian.

The buffalo not only gave the Indians food. It gave them shelter and clothing. Indians wore buffalo robes. Their tepees were made from buffalo hides. Buffalo horn and bone were used for tools.

The Indians did not grow crops. They did not own land. They did not try to change the balance of nature. They just took what nature offered.

They never killed more buffalo than they needed. There were always enough

buffalo left to reproduce and thus replace those that had been killed. As long as there was enough grass, there would be enough buffalo. Buffalo would be a constant source of food, shelter, and clothing for the Indians.

Cattlemen

I learned that few white men settled on the Plains until after the Civil War. Until then, explorers thought this region was a desert. It was only a place that had to be crossed to get to California or Oregon. But in 1869, something important happened. The first transcontinental railroad was completed. It went from the Atlantic coast to the Pacific.

Now men saw that they could make a living on the Plains. They could raise cattle on the great fields of grass. Then they could ship the cattle by the new railroads to the great markets in the cities in the East.

Cattlemen moved onto the open range. They came with their guns and horses. Their cattle grazed freely and were rounded up once a year by cowboys. They were driven to the railroads. As more cattle were raised, the great herds of buffalo were killed off. Cowboys shot them for sport. They were shot for food. Some were killed for no reason at all. They were easy to kill. Their meat and hides brought good prices.

The Indians pleaded with the white men. They asked them not to shoot the buffalo. They explained that they would have to leave the Plains because their main source of food was gone. But the white men kept on killing the buffalo, and by 1890 most of them were gone.

By 1890, the grass had become very thin. More and more cattlemen brought more and more cattle onto the range. The land was overgrazed. Good grassland was scarce. Cattlemen fought each other for it and fenced off their land to keep others out.

Farmers

Farmers didn't want cattle roaming over their farms. Cattle ate up their crops. But cattlemen didn't want good range land turned into farms. This caused many fights between the cattlemen and the farmers.

Finally they solved this conflict by building fences. Talking about fences was easy. Making fences was hard. What could they make fences with? Wood was scarce on the Plains. Stones were even scarcer. Hedges could not live through the hard winters and dry summers on the Plains.

A new invention solved the problem. It was barbed wire. Barbed wire was cheap. It was easy to use. It was not very beautiful, but with it farmers and ranchers could fence in large amounts of land at low cost.



From 1862 to 1900, the government of the United States offered 160 acres of free land to any family that would live on it and improve it. Such land was called a *homestead*. Homestead land on the Great Plains had few trees. So families like these built houses of sod.





Early homesteaders harvested wheat with curved tools called *cradles*. They also *threshed* the wheat by hand. Threshing means separating grain from the stalks and husks. Today, machines do both jobs.

The Balance of Nature Is Upset

By this time, the delicate balance of nature was disturbed. The grassland was overgrazed. Animals depended on the grass for food, and many of them starved to death. The buffalo were killed or died of starvation. This left the Indians without their main source of food.

But most of all, it was the farmers who upset the balance of nature. They plowed up the land. They exposed the dry soil. It was very dry and loose, since there were few grass roots left to hold it. Winds blew the soil into the air and caused great dust storms.

The balance of nature on the Great Plains was disturbed. It was never the same again.

The people had no lumber to build homes. There was no fuel. There was little water. Summers were hot. Winters were cold. There were droughts and wind and dust storms. Now and then millions of grasshoppers, thick as clouds, settled on the land. They ate the countryside bare. Crops were ruined.

There were also prairie fires and flash floods. The sod was hard to plow.

The sod was so hard it broke the plow blades. Another invention, as important as barbed wire, was created. In the 1880s, a stronger, smoother steel plow was brought to the Plains. It broke the sod and slipped through it without breaking.

The plainsmen needed water. They dug wells. But water had to be drawn up daily by water buckets. Then someone had an idea. He said, "Why don't

we use the strong wind of the Plains to pump the water out of the wells?" So farmers bought steel windmills. These used the wind's energy to do the pumping.

Finally, the settlers needed a new kind of wheat. It had to be strong enough to grow on the Plains. The wheat seed brought by the first settlers did not grow well. It could not stand the long, dry summers. But then some farmers came to the Plains from Russia. They brought a wheat seed that could stand long periods of dry weather. It was called "Russian Red." It could live through the bad years. The new wheat was suited to the Great Plains.

As I read, I began to understand what Uncle Fred and Mr. Jackson had told me. The first settlers had tried to fight and conquer nature. They had not tried to live with it.

LIVING WITH THE PROBLEMS

Later in the week, I drove into town. It was a typical summer day on the Plains. It was hot and dry. I stopped at the drugstore for an ice cream soda. There I learned about "sidewalk farmers" from Mr. Bowen, a teacher in the high school.

"Sidewalk Farmers"

"What are sidewalk farmers?" I asked.

"Farming the Plains can be a lonely life," he said. "A family is miles from the nearest neighbor. It's hard for the children to get to school. It's hard for

wives to do shopping and get to church and club meetings. The weather doesn't help. Have you ever driven through a Kansas blizzard or a summer hailstorm?

"People decided that they didn't have to live exactly where the wheat is growing. They moved to town. These are the 'sidewalk farmers.' They don't really manage their farms from the town's sidewalks. But they are farmers who live in town.

"It makes a lot of sense. Wheat doesn't take as much care as many other crops. Between planting and harvesting there's not much to do. In town, children can go to school and wives can shop. The town can build bigger and better schools.

"The farmer goes perhaps eight or ten miles a day out to his land. He comes back to town again at night."

Too Many Governments

"On the Plains," Mr. Bowen went on, "there are other problems. For one thing, there are too many governments. Take counties. A county government takes care of some roads, some schools, and a few other things. There isn't enough tax money in some counties to pay for all the services people need. That is because the counties don't have enough people in them.

"We have counties where only two or three thousand people live. These few

people have to pay for all the county government. It's the same in other Plains States

"Time was when counties had to be small. The main town had to be within a half day's horse-and-buggy ride. Then a farmer could do his business and get back home in one day. Today, with cars and good roads, counties could be four or five times larger.

"In fact," said Mr. Bowen, "many of our problems are too big for even one state to solve. All the Great Plains States have problems with water, soil, and electric power. They should work together on them."

Using Up Water

"Take water," Mr. Bowen said. "We are gradually using it up. At this rate, our water supply from under the ground will be gone in another 30 or 40 years."

"Doesn't the rain put water back into the ground?" I asked.

"No," said Mr. Bowen. "We don't get enough rain. Once the water is gone, it's gone forever. People in the Plains region must plan to get water from other places before the ground water is all gone."

One-Crop Region

Most farmers in the region grow only wheat for the market. If there is a bad wheat harvest, everyone suffers. If there



is a good wheat harvest, all the farmers have lots of wheat. Then the price for wheat falls. But the farmers must take whatever is offered. Wheat is the only crop they have.

Mr. Bowen and I stopped at Guttenberg's farm-equipment store. I asked Mr. Guttenberg why a farmer didn't grow less wheat if the price was too low. Couldn't he then get a higher price for a smaller amount of wheat?

Mr. Guttenberg laughed. "What one farmer produces is just a drop in the bucket. Even if several farmers produced less, it wouldn't affect the price.

"The government has been asking all the wheat farmers not to plant all their land. Then the price of wheat will be higher. But what happens? The farmer uses more fertilizer and better seed. The result is that he produces more wheat on less land. Not long ago we did well to harvest 16 bushels of wheat from each acre. Today, if we don't get 25 or

26 bushels an acre, we think we're not doing well."

"Why don't we try to sell wheat to other countries?" I asked.

"I wish we could," Mr. Guttenberg said. "But those countries might be able to buy cheaper wheat somewhere else."

After a moment of silence Mr. Guttenberg said, "A Kansas farmer has little choice. Nature has not given him a chance to grow much of anything except wheat."

"That paints a pretty black picture," said Mr. Bowen. "Plains farmers are growing other crops. There's a lot of cotton in Texas, New Mexico, and Oklahoma. There's flax in North Dakota. And there's a good deal of sorghum around here. Farmers also grow alfalfa and soybeans. Wheat has been the only great success, but we are planting other crops. We also have cattle in the West and the oil that people are finding on the Plains."



A farm in Kansas. Many Great Plains farms are far from the nearest town or city. The sky is open. The air is fresh and clear. You can watch the wind ripple the grain across miles of flat fields.

“You’re right,” said Mr. Guttenberg, “but don’t forget that just about everything we produce has to be sent somewhere. Our flax and cotton has to be spun and woven. Our wheat must be milled and baked into bread. Our oil must be refined. We sell only raw materials. But we buy back the goods that are made from them. When we buy food, or clothing, or machines, we have to pay for more than the raw mate-

rials in them. We also have to pay for the workers’ wages and the businessmen’s profits. We have to produce a lot of raw material to buy the factory-made goods we need.” Then he looked at me and smiled.

“But you don’t want to hear all this. Go on back to your uncle’s farm and get some of our good earth between your toes. Breathe some of our dry, clean air.”

FOREST REGIONS DISAPPEAR

Atlantic Coast Overcut

About 250 years ago, the entire eastern part of the United States was covered with thick green forests. They grew from the Atlantic shores to the Appalachian Mountains and beyond. The settlers along the eastern coast saw no reason to protect trees.

The settlers had more trees than they could use. But they did not have enough corn, wheat, or livestock. Farm-land was important to them. Forests were not. People and animals had to be fed. Space was needed for pastures and for corn, wheat, and cotton fields. Space was needed for vegetable gardens. So, it seemed to make sense to cut down the forests and clear land for farming.

Trees were burned. They were cut down for lumber. They were used to build ships in the shipyards of Massachusetts. The tall, straight pines were used for the masts. Melted pitch from the pine trees was used to fill the seams of the ships. Pine tar was used to preserve the ropes attached to sails and masts.

The forests yielded more than lumber. Tree bark was used for tanning leather. Maple sap was boiled into syrup and sugar. Men cut the trees as

if there were an endless supply. In two hundred years, the forest land was stripped from the Atlantic shores to the Appalachian Mountains. Corn grew and cattle grazed where dense forests once stood.

Midwest Forests Thinned Out

Settlers began moving west. They used lumber to build homes and stores. They used wood for wagons and furniture. They even used lumber to make roads.

Settlers in the East had to clear thick forests before they could plant crops.



So the lumber companies moved to the Midwest. The lumbermen cut into the forests of the Midwest as they had cut into those of the East.

Then they looked to the forest regions of the North. They could buy land there from the government for only \$1.25 an acre. They bought thousands of acres of forest land in Michigan and Wisconsin. They started cutting trees there faster than ever before.

This Upper Great Lakes forest region became, for a time, the lumber center of the world. Chicago became the greatest lumber port in the world. From 1870 to 1890, piles of lumber stretched for miles along the waterfront.

Finally, this forest region too was ruined. The good trees had been cut down. Great forest fires burned the rest.

After the timber had been cut, people planned to use the land for farming. But they got an ugly surprise. The soil would grow pine trees, but it would not grow crops. The soil was too sandy. It would not hold water. Men had not worked with nature in this region. They had robbed the land of its natural resources. Then they left it poor and empty.

From the north woods, the lumbermen moved to the forest region of the South. Here were deep forests of tall pines. The lumbermen bought thousands of acres because land was cheap.

By this time, new logging and sawing machines had been invented. Down fell the trees faster than ever!

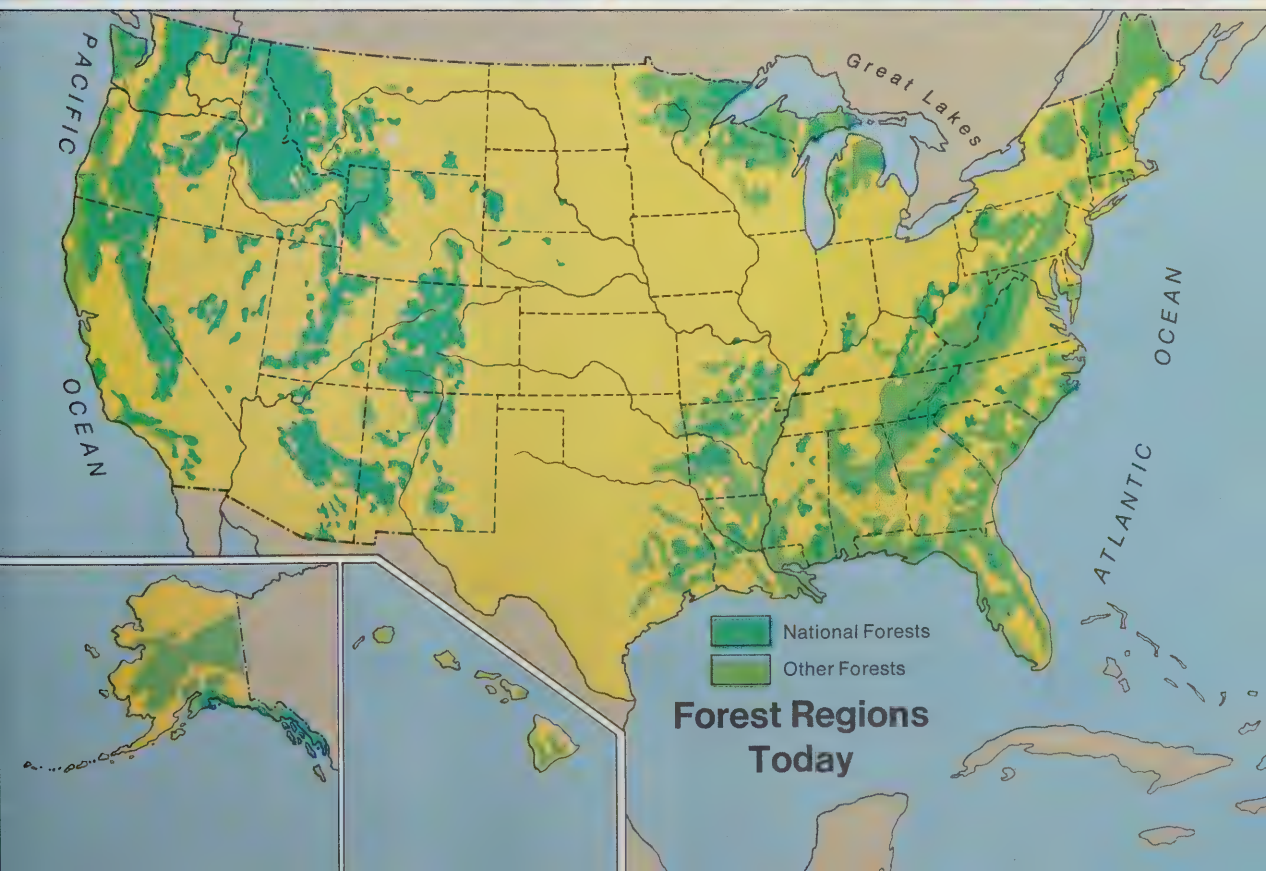
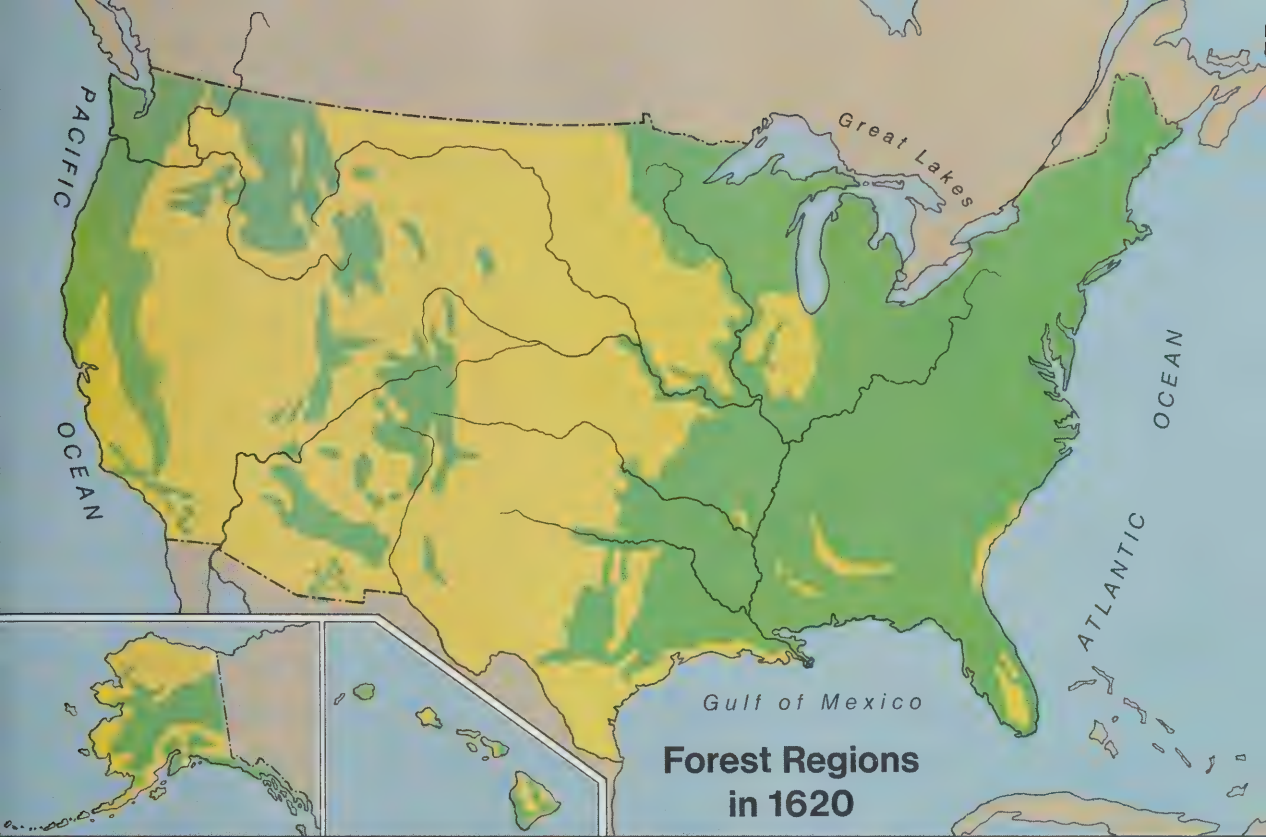
Search for Wood Moves West

In 1849, gold was discovered in California. Thousands of miners hurried west. They needed houses. They needed stores. They needed timbers to prop up tunnels in the mines.

California had huge forests of redwood, sugar pine, and western hemlock. Lumbermen moved into the woods with their saws and their hauling chains. They set up logging camps in California just as they had in other forest regions.

The Northwest Forests Attacked

From California, the lumber industry moved north to Oregon and Washington. At first, the lumber from these forests was used only along the West Coast. It cost too much to ship it by rail to the eastern regions of the United States. The lumber had to be shipped around South America to reach eastern cities. This made the price of West Coast lumber too high. By this time some forests in the East had grown back. West Coast lumber could not compete with lumber cut closer to the East.



In 1914, the Panama Canal opened. Ships did not have to go around South America. The canal made the trip to the East 10,000 miles shorter. This cut the cost of transportation. Now the lumber of the Pacific Northwest could com-

pete with the lumber in other regions.

The West Coast lumber industry developed rapidly. Power tools and machines were invented. Tractors, trains, and chain saws made tree-cutting a big business.

SAVING THE FORESTS

By this time, some men began to worry. The forest regions were disappearing.

In 1901, President Theodore Roosevelt asked specialists to study what was happening to our forest regions. These men discovered that one-fourth of the timber was being wasted. They also discovered that soil was washing away because the trees were carelessly cut. Wind and rain were carrying great amounts of topsoil into the rivers and oceans.

President Roosevelt to the Rescue

President Roosevelt decided to save our forests. He had the help of Gifford Pinchot who became the chief of United States Forest Service. Gifford Pinchot believed that if timberland was managed wisely, there would always be enough trees to supply our needs.

Mr. Pinchot's ideas were adopted. People did not want the forests de-

stroyed. The forests are valuable for more than just lumber. They provide homes for wild animals. They help control the flow of streams and rivers. The water supplies of some of our great cities depend on forest lands. The forests keep rain from running off the hills too quickly. Forests check floods.

National Forests Established

Mr. Pinchot asked Congress to set aside some land that would be known as national forest areas. The lands inside these areas were to be left just as nature formed them. They still are. They are there for all the people to use and enjoy.

Mr. Pinchot also persuaded lumbermen to plan their use of forests. It was good business to do so. Lumbermen knew that the population and industry would grow. This would cause the price of trees to rise steadily.

New Kind of Farmer

There are farmers who use no planter to plant their seeds. They harvest their crops without a harvester. Instead, they plant seeds with helicopters! They harvest crops with chain saws and axes!

Who are these strange farmers? Why do they use these strange tools? They are tree farmers. They plant, tend, and harvest crops of trees. More and more of the wood products we use come from these tree farms.

To make money, corporations that own tree farms must always have a crop ready to harvest. Suppose that it takes 40 years for trees on one acre to grow large enough to be harvested. To have a crop of even one acre of trees each year, the tree farm must have at least 40 acres. Tree farms must therefore be very large.

Waiting for a tree to grow up is a slow way to earn a profit. It is also a great risk! During the 40 years of waiting, many things can happen. Disease and insects may kill the tree. A forest fire may destroy great numbers of trees. Then all the years of growth are lost. All hope of a profit is lost.

Have We Enough Lumber?

We still have great forests in our country. Today there are enough trees in Oregon to double the number of houses in the United States. The state

of Washington alone has one-sixth of all the lumber in the United States. The Rocky Mountain Region and Alaska still have great supplies of trees. Many companies replace as many trees as they cut on their tree farms.

Today our food farms can produce more food on less land than ever before. Less land may be needed to produce food. More land can then be used to produce trees.

Some people wish that more forest lands would be set aside for beauty and recreation. Others wish that more of the forests would be used for lumbering.

There is no reason why both wishes should not come true. If we are careful about fire and pollution, we will always have forests to play in. We will still have enough lumber for factories and homes.

Test Yourself

1. What features of the Great Plains region have limited man's work there?
2. In what ways has man tried to change or improve upon nature in the Great Plains region?
3. What are the advantages of being a "sidewalk farmer?" What are the disadvantages?
4. Why has the growing of trees been called a risky business?

HOW TREES ARE FARMED



The forests of the United States are natural resources of great value. Since colonial days they have given man shelter, food, fuel, and products for trade. The forests also are valuable because they are beautiful.



Much has changed since the early days. Forests then were cut down without thought for the future (1-2). It seemed that the supply of trees was endless. Today people realize that this is not true. They know that forests must be cared for, or the forests will disappear (3).

Now people know that trees must be replaced. New trees, called *seedlings*, are grown at nurseries. They are cared for until they are two years old. Then nursery workers pack the seedlings (4). They are then shipped to forest lands where they are planted.

Foresters use plow like machines to plant the young trees (5). Two men operating such a machine can plant up to 10,000 seedlings in a day.

After planting, the trees must be cared for. Airplanes and helicopters spray the forest with fertilizer. This speeds up the growing process (6). Foresters watch the forest carefully. Insects or fires could destroy the young trees.



Good forest care also includes thinning (7). This means cutting down some of the trees. This gives the other trees plenty of room to grow.

Finally the trees are fully grown. They are ready to be "harvested." Loggers use power saws and other special machines to cut down the tall trees (8).



7

Trees are harvested in different ways. For example, the Douglas fir tree does not grow well in the shade of other trees. So the Douglas fir is harvested by the *clear-cutting* method (9). All the trees in the forest must be cut down. Only then can the new Douglas firs grow tall and strong.



After harvesting, new seedlings are planted. Within 15 years, a new strong young forest is growing. But another 30 or 35 years will pass before these trees, too, are ready for harvesting (10). It takes 50 years to replace a forest of Douglas firs. That is why it is important to care for forests and to use them wisely.





Chapter 2

Mineral Regions

Do you have a penny? Take a look at it. The color is reddish brown. That is the color of the mineral called copper. Pennies are made from copper. Years ago, pennies were called *coppers* for this reason. Today, copper is still used in most of our coins.

Copper is only one of many minerals used by man. Minerals are made by nature. It took millions of years to make them. Minerals may be found in soil, in rocks, in ocean water, on the sea bottom, and under it. Some minerals are in metal form, like gold or iron. Some are like coal or clay.

Many of nature's resources can be renewed. These are called *renewable resources*. For example, water is a resource that nature can replace. But other resources are nonrenewable. They cannot be replaced. Minerals cannot be replaced. Once minerals are mined, they are gone forever. No matter how hard man works, he cannot mine more minerals from a region that has been mined out. Man's activity in mineral regions is limited.

Let's explore two mineral areas. One produces copper. The other produces oil.

Left: Open-pit copper mine, Bingham Canyon, Utah

COPPER REGIONS

Look at the map of our country. Notice the copper-mining regions. They are mainly in Montana and the Southwest. One-half of the copper mined in our country today comes from the state of Arizona.

It Started in Michigan

The first big copper-mining region was in Michigan. It was developed in the 1850s. Most of the country's copper was mined there.

The copper-mining region of Michigan was successful for many years. There was good, cheap transportation through the Great Lakes to markets in the East. The Michigan ore was rich in copper. It did not cost much to get copper out of the ore.

But as the mining went on, most of the copper near the surface was taken. Miners had to dig deeper into the earth. This took more expensive machines. The ore deeper in the ground had less copper in it. It became more difficult for mineowners to earn a profit.

The mineowners had to raise the price of Michigan copper to make a profit. Copper buyers did not like this. They did not want to pay higher prices. They looked for copper that would cost less, and they found some in Montana.

Montana Wins Out

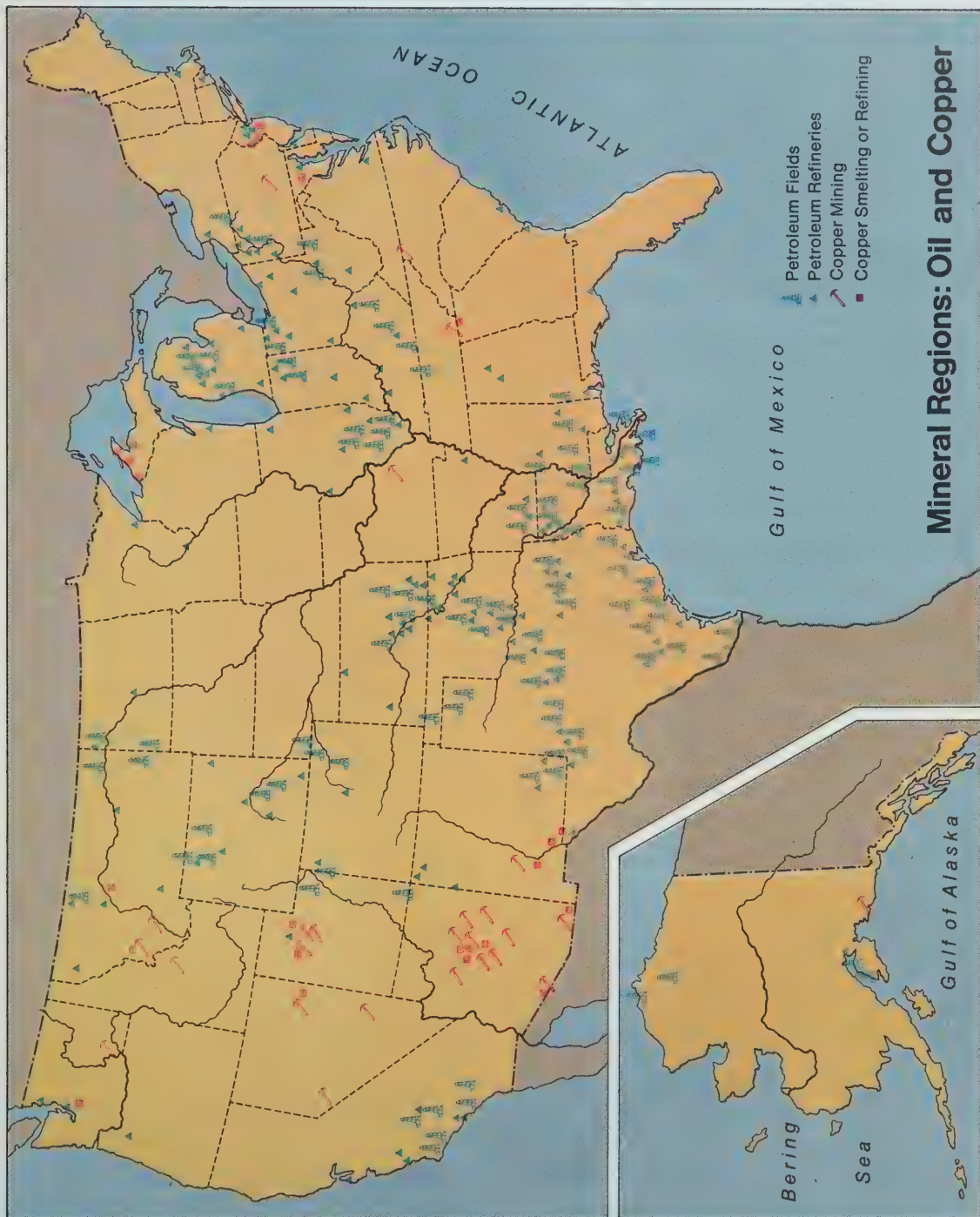
A new copper-mining region was opened near Butte, Montana. The ore was rich in copper. In fact, a mountain near Butte was so full of ore that it was called the richest hill on earth.

The mineowners of Michigan tried to fight the competition from Montana. They started a price war by cutting their prices. Then the Montana copper mines cut their prices also.

The Montana mine owners won out. They could charge cheaper prices and still make a profit because they had a bigger and better source of copper. It cost less to mine and refine.

After 1900, the Michigan copper region did less and less business. Most of the people of this region earned their livings from the copper-mining industry. When the mines began to close, there were no more jobs. People had to move away. The rich mining towns turned into ghost towns.

Why did the Montana mines win in the competition with the Michigan mines? Because the good Michigan ore had already been mined. The ore that remained in the mines wasn't very good. It took expensive equipment to get copper out of this kind of ore.



The Montana copper mines were new. The ore was rich in copper. It cost less to refine the ore. The ore was also much easier to reach. In Michigan mines, men had to go underground in deep narrow tunnels to get copper ore. But the mines in Montana were great open pits.

Smelters, or furnaces, were built close to the open pits. Pure copper weighed less than raw ore. It took up less space. So it was cheaper to transport to market.

Arizona Is the Largest

The greatest copper region in the world was in the southwest corner of the country. It was in Arizona. People had known for a long time that good cop-

In the early 1900s, copper mining was very hard work. These Arizona miners had to dig out copper-rich mud by hand. They had no modern machines to help them.



per was there. But Arizona was a long way from the eastern markets. There were no railroads in that part of the country. So it took time and money to get the copper to market.

The rocks rich in copper were loaded on donkeys. They carried the ore across the Arizona Desert to the Colorado River. The ore was then placed on barges. Down the river went the barges and out into the Gulf of California. Then the ore was loaded onto ocean ships at a port on the Gulf. These ships carried the ore all the long way around the tip of South America. Then it went across the ocean to England. At last, it was fed to the smelters there.

This journey was long and expensive. Only the very best ore could be taken and still yield a profit. There were smelters in the eastern United States but it was still cheaper to send the ore to Britain.

Railroads Help But things changed in the 1880s. Two railroads were built from California right across Arizona. They went to the industrial regions in the East. One railroad was the Santa Fe. The other was the Southern Pacific. Now copper from Arizona could get to the markets faster and cheaper.

Inventions Help In 1879, Thomas Edison invented the electric light bulb.

This invention needed copper wire to carry the electricity.

Everyone wanted electric lights, so the demand for copper rose. The demand for electricity spread all over the country. People in cities and villages started using electric lights and a few electric appliances. Industry began using electric power. Over the years, hundreds of new electric appliances were invented. Now new ones are invented almost every day.

Cheaper Mining Helps Today, there are ways for companies to get copper out of ores that are not very rich and still make a profit. In the past, when good ore was mined out, mines closed.

Today, the ore that is not rich in copper can be taken from Arizona's great open pits. Great shovels scoop out the ore. The ore is taken by truck or train to a nearby smelter. There the different metals in the ore are separated. Lead and zinc may also be in the ore. These ores can be sold, too. Income from them will go to the mining company. This extra money makes up for the lower price that the company gets from selling the lower-grade copper ore.

Copper companies believe that we will be using more and more copper. So they are looking for more deposits. But when they find a copper deposit

they face the question, "Can we make a profit in mining the ore?"

The profit depends on how much copper there is and how rich it is. It depends on how much it costs to get it out. How can one find out these things without spending a lot of money?

To Mine or Not to Mine

In the 1960s, a company in Arizona found a copper deposit deep under the Arizona Desert. Engineers drilled hundreds of holes in the ground. They took rocks from these holes and examined them. Geologists could tell by looking at these rocks just how big the deposit was.

They made a map of the deposits. They figured out that it would take a pit one-third of a mile deep and one and a half miles wide to get the ore out. They also discovered that they could do this and still make a profit. But only if the price of copper did not fall!

No one can guarantee that the price of a metal will stay the same. It may go up or down. It depends on the amount people are willing to pay for it.

The businessmen decided that they would trust their judgment. They believed that the price of copper would go up or at least not go down. They went ahead and spent the money to get the copper out. Will they be able to make a profit? Only time can tell.

OIL REGIONS

How Oil Was Made

Millions of years ago, a warm shallow sea covered most of the earth. In those waters lived millions of tiny animals.

In time the animals died. Nature gradually covered them with a layer of rock and silt. Years passed. More rocks and silt built up. The layer became thicker and heavier. Finally it became like a heavy rock blanket. Harder and harder it pressed on the decayed sea animals' bodies. The pressure turned them into oil and gas.

The rock layer was not solid. Some of this oil and gas slowly seeped into the tiny pores of the rock layer above. Water from the sea also flowed into these pores. Since natural gas is lighter

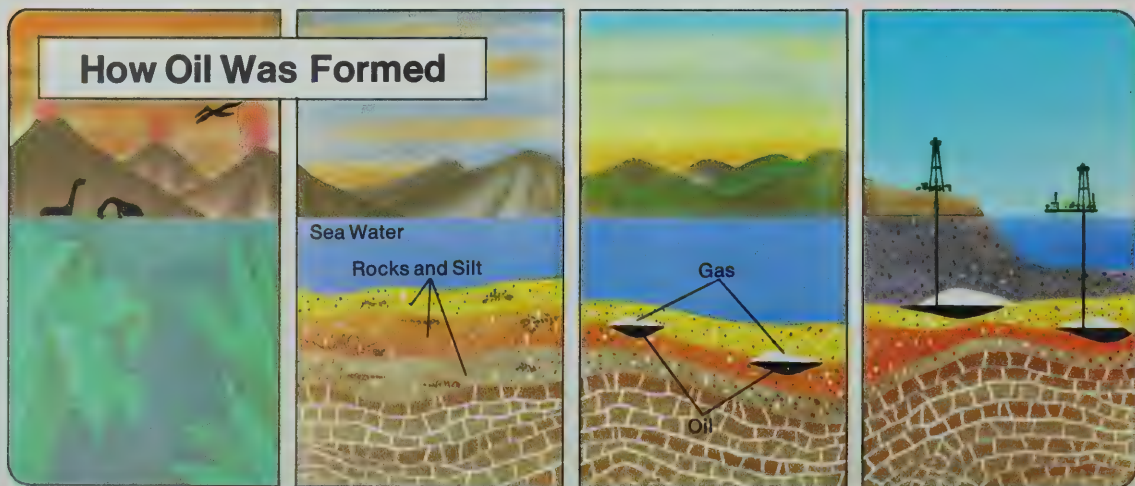
than oil or water, it filled the upper part of the rock layer. Oil settled beneath the gas. Seawater was the heaviest, so it remained lowest in the rock layer.

Millions of years later, great natural forces, such as earthquakes and erupting volcanoes, thrust up portions of the rocky blanket. It was thrust up above the surface of the sea.

Much of the seacoast and the central part of North America was raised in this way. Those areas are covered by the rocky blanket that contains oil.

How the Oil Business Began

Oil was first found in our country in Appalachia. This is the mountain country in the eastern United States. The land was once on the bottom of an an-



cient sea. Then, nature folded and bent the rocks. During the folding and bending, cracks appeared in the earth's surface. Finally, out of one such crack some oil ran into a little creek. Indians found it, and it was named Oil Creek. It was in the state of Pennsylvania.

More than a hundred years ago, the Indians began to sell the oil. They sold it to white men in Pittsburgh. The white men used the oil for lamps. They used it to heal wounds and to grease machinery. This kind of oil was better and cheaper than the vegetable oil or whale oil that people had used.

Rock oil had great promise. But how could this valuable rock oil be brought out of the earth more cheaply and in a steady flow?

How Oil Is Drilled

A group of businessmen believed that they knew how to do this. Men were getting water and salt out of the earth in Appalachia by drilling for it. Why couldn't oil be drilled out of the earth, too?

These men thought that they could drill for the oil and store it. Then they would sell it and earn a large profit. They formed an oil company.

They used the savings of many people to buy the tools needed for drilling. They hired a man named Edwin Drake to take charge of drilling. In the sum-

mer of 1859, Edwin Drake and his crew of workers began drilling for oil.

They were on the banks of Oil Creek at Titusville, Pennsylvania. The work of drilling through the rock was slow. People had never seen anything like it. They made fun of the drilling. They called the drilling machinery "Drake's Folly." Finally one August afternoon, the drilling machinery struck oil.

How Fortunes Are Made and Lost

The news spread fast. Men raced to this region to join the hunt for "black gold." Hundreds and hundreds of wells



Titusville, Pennsylvania: Oil Creek in 1864. A forest of oil wells sprang up after the success of "Drake's Folly."

were drilled. At first, the oilmen sold all they produced at a good price. Oil producers earned a high profit. High profits encouraged more production. The men knew how to drill for oil, but they did not know how to stop the oil from coming out of the well. When wells were drilled, the oil hunters had to sell their oil as fast as it flowed out of the ground. As large amounts of oil were produced, the price fell. When the flow of oil slowed down, the oil became more scarce and the price rose.

The natural gas that escaped when the oil wells were drilled was wasted. Men did not know how to use this gas. They did not know how to keep it.

Many people made great fortunes from the oil fields. Others lost fortunes as the price of oil went up and down.

But the search for new oil fields went on. New uses for oil were discovered. Homes could be lighted better. Machines could run faster. They could last longer with better lubricants. Homes, schools, and factories could be heated with oil. These new markets for oil kept the oil hunters looking for more oil. In the 1880s, they found it in Ohio, Indiana, and Illinois.

The first oil refinery in the United States was built in the 1850s. In refineries, oil is heated and separated into its parts. This process is called refining the oil. At first the refineries were built

to produce kerosene, and greases and oils for machinery. Gasoline was produced as a by-product during the refining process, but man had no use for it. But around 1900, gasoline was no longer a by-product. Man knew what to do with it!

Gasoline was needed for the gasoline engine in the horseless carriage. As more people wanted cars, tractors, and trucks, gasoline was needed for thousands of engines. Later, it fed airplane engines. The map on page 47 shows the major American oil fields and oil refineries which fill these needs today.

The South Central Gushers

The oil fields of Texas and Oklahoma were discovered by accident. One day about 1900, people in Corsicana, Texas, were drilling wells for water. Suddenly, a thick fountain of oil shot out of the ground. It was oil of good quality. People did not even need pumps. Once the wells were drilled, oil just gushed out. With such gushers, oil seemed unlimited.

The price of Texas oil rose and fell just like the price of Appalachian oil. But by this time men had learned how to shut off the wells. They learned to store the oil in tanks above the ground.

Still, oil prices went up and down. When oil was discovered in a region, many people hurried there. Each person

bought a small piece of land. Everyone tried to drill a hole quickly before someone else could take out all the oil. These people with their wells into the oil were like greedy children with straws sharing a glass of lemonade. Each worked as fast as he could to get as much as possible for himself.

There seemed to be a sea of oil. The oil wells brought the oil to the surface faster than it could be used. Since there was more oil than could be sold, the price of oil went down.

To be sure of a good price for oil, some producers wanted to limit the amount of oil each well produced. Some wanted to space oil wells farther apart. Others did not want laws to control their production. The state of Texas did pass laws. It made laws to control the number of wells. They limit the amount of oil each well can pump.

Black Gold in California

In the 1920s, the oil hunters moved westward. Oil was discovered in California. California produced more oil than any other state. But oil production in California is not so large today. The oil companies have to compete with others for the use of the land. They compete with builders of factories and motels. The business that gives the greatest profits to the landowner gets the use of the land. But oil derricks

can still be seen in orange groves, on beaches, and even among the buildings of Los Angeles.

Drilling Under the Sea

In the past, oil hunters sank their wells mainly on land. As the oil near the surface was taken out, men had to drill deeper and deeper. This increased the cost. Men then began to think about drilling under the sea.

Undersea drilling opened up new regions of oil. One new region is part of the ocean floor of the Gulf of Mexico.

It is very expensive to drill for oil under the sea. It may cost two million dollars to drill a single ocean well. Before oil hunters begin to drill they want to be as sure as possible that they will strike oil.

They send shock waves down through the ocean floor. The kind of sound that bounces back tells them about the shape of the rocks under the ocean floor. Deep-sea divers carry waterproof cameras. They take pictures of the ocean floor. Geologists know what rocks that are rich in oil look like.

What the oil hunters learn about the sea floor tells them where to drill their wells. When they are ready to drill, they bring a steel platform to the spot they have chosen. There they anchor it firmly. Such platforms stand on long steel legs. The legs are planted in the



An oil rig in the Gulf of Mexico. Huge rigs like this drill and pump oil from thousands of feet beneath the Gulf.

sea floor. Some drilling is done from platforms that float like ships. These do not need legs to support them.

A steel platform must be large enough to hold all the drilling machinery. Often it also houses a crew of workers. The workers on the platform live well. Their meals are good. Many have libraries, radios, and television sets. Some even have small movie theaters.

Drilling for oil under the sea costs seven times as much as it does on land. There are special problems of drilling and pumping. The oilmen have had to solve these problems to make ocean wells profitable.



Once oil is found, it must be piped to shore. Workers check hundreds of valves and gauges to keep the oil flowing.

Many improvements have been made in drilling machinery. There are robots that work underwater. The robots are directed by the men on the steel islands. Such a robot has “eyes” to take pictures. These are sent to the men above. The pictures show the drillers what the ocean floor is like. This robot moves by itself on the bottom of the ocean. It can repair equipment. It is able to use its arms to turn the underwater faucets of oil wells on and off.

As the population grows, the demand grows for more oil for homes and factories. This increases the demand for oil. So men seek new oil regions. They go wherever they think oil may be.

Oil Won't Last Forever

Scientists wonder how long we will be able to pump oil out of the earth. Someday the supply will be gone. Oil cannot be replaced.

Then men will have to find new ways to heat their homes and run their cars, airplanes, and machines.

Scientists believe there are still large oil reserves in the world. Whether we will use them depends on two things:

- How much will it cost to produce oil from these new reserves?
- How much will it cost to produce sources of energy other than oil?

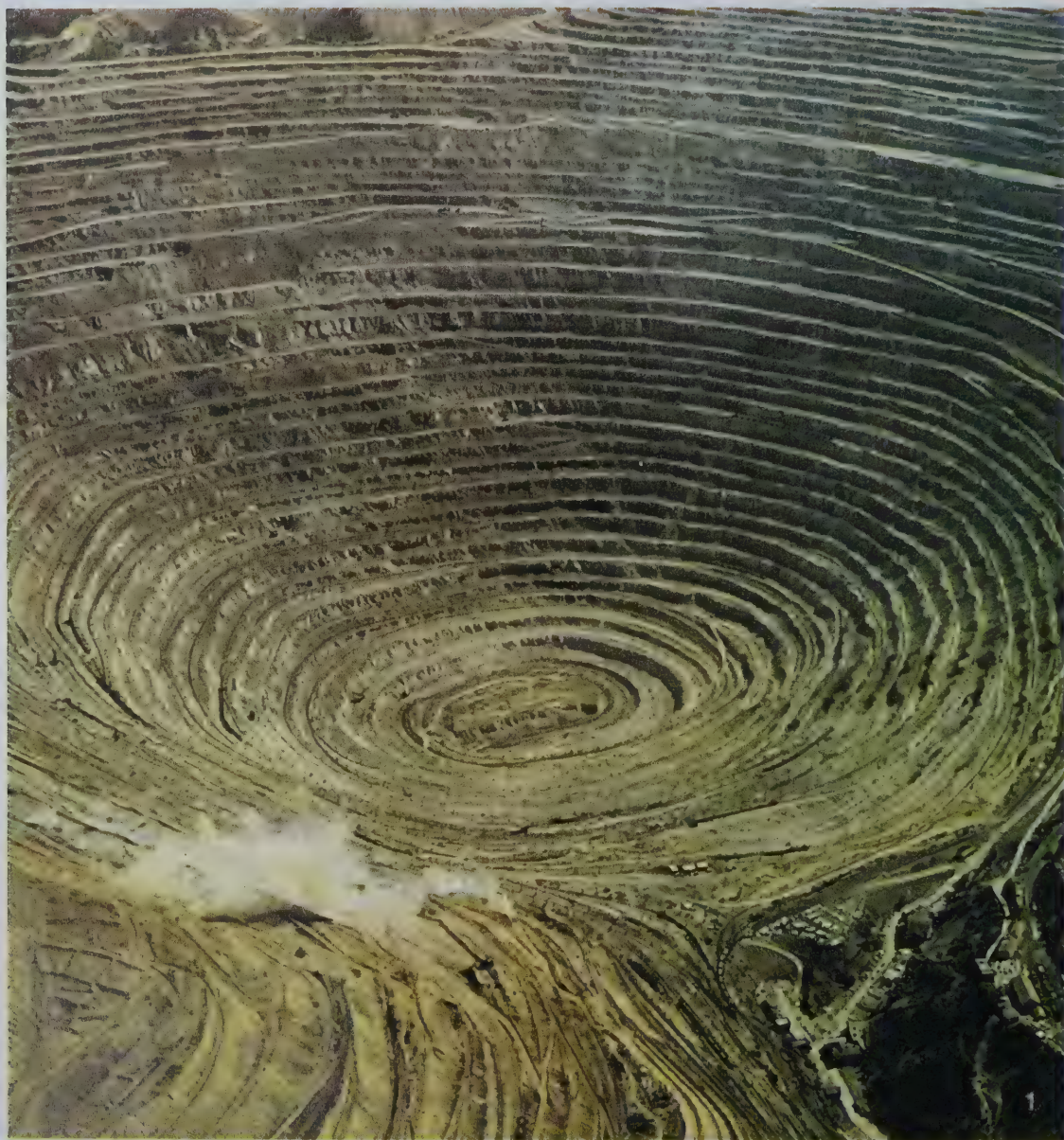
One new source has already been found. It is atomic energy. Other sources are waiting to be discovered.

Test Yourself

1. In what types of places does man search for minerals?
2. Why are some resources called "nonrenewable"?
3. What factors might cause a mineral such as copper to cost less to mine in one area than in another?
4. Why do we often refer to oil as "black gold"?
5. Why do you think the demand for oil has been increasing over the years?



HOW COPPER IS PRODUCED





There are places in Montana and the Southwest that are rich in minerals. Great beds of copper ore (rocks which contain minerals) lie near the earth's surface. Here, giant machines carve out great *open-pit* mines (1).

The different levels of these mines are called *steps* or *benches*. On each step, miners use explosives to blast loose thousands of tons of copper ore. Powerful electric scoops and shovels (2) then can gather up the ore. Open-pit mining is an easy and cheap way of reaching minerals in the earth.

In other areas of the United States, copper was found far beneath the earth's surface. Michigan was such a place. In Michigan, copper was dug from deep shafts in underground mines as shown here (3). But this kind of mining was expensive. So more and more of the world's copper is now taken from open-pit mines.



Once the ore is mined, it goes by train or truck to a copper mill. Copper mills usually stand near the mines they serve. Their job is to separate, or *refine*, pure copper from the waste rock and other impurities of the ore.

First, the ore is crushed to small pieces by heavy iron balls inside huge metal drums (4). Then, another machine grinds the crushed ore to a fine powder. Water is added to the powder. This makes a soup-like mixture called a *slurry*.

Now the refining process begins. Chemicals are added to the slurry. This causes tiny bits of copper to float to the top in a foam (5). The foam is drawn off and dried. But the copper is far from being pure. It is still mixed with rock and other waste. So the dried material goes to a *smelting furnace* (6).





In the smelter, the copper material is melted to a fiery, bubbling liquid. The great heat burns away some impurities. Next, chemical powders are added to the mixture. The powders cause more impurities to separate from the copper.

These impurities rise to the surface of the liquid. They form a crust called *slag*. Slag is waste. It is scraped off and thrown away. Then the process is repeated.

The mixture in the furnace needs still more refining. In another furnace, blowers force air through the melted, or *molten*, copper mixture. More impurities are removed. The new mixture is called *blister copper*. This is because the surface swells into blisters as it cools.

Blister copper is 97 percent pure. A *refining furnace* completes the process. The last impurities are burned away. Now the pure copper can be formed into different shapes (7). It is ready for use.





Chapter 3

River and Sea Regions

A river region is shaped by nature. It is shaped something like your bathtub at home. Imagine that the sides of the tub represent mountains. Further down near the bottom are plains and lowlands with their farms and towns.

Snow and rain fall on the mountain peaks. Snow melts. The water flows down the steep sides of the mountains. Along the way it forms little brooks. The brooks form big streams. The streams form little rivers. Finally, the little rivers pour into a big river that flows along the lowest part of the region. The big river then empties the water into the ocean just as bathtub water empties into a drain.

The brooks, streams, and little rivers are branches of the big river. All the land watered by these branches is the river region.

The branches and the river make up the river system. They act together to make the system work.

Let's take a look at the river region and the system formed by the largest river in the nation.

Left: Tugboat and barges on the Mississippi River

THE MISSISSIPPI SYSTEM

Deep in the forests of Minnesota lies a little lake. It is called Lake Itasca. From it flows a small stream. Each year, thousands of tourists step across the stream. Do you know why? So they can brag that they have walked across the Mississippi River!

From this small beginning, the Mississippi grows bigger as it travels south. A thousand miles away streams and smaller rivers flow down from the Rocky Mountains. Finally they join the Mississippi. The river flows south for 2,350 miles. Along the way it gets bigger and bigger until it finally empties into the Gulf of Mexico.

The Mississippi has the biggest river system in this country. It drains water from nearly one and a half million square miles of North America. That is why the Mississippi River was called the “Father of Waters” by the Indians who lived nearby.

Systems Have Subsystems

The Mississippi System is so big that it has *subsystems*. They are the Upper Mississippi, the Lower Mississippi, the Missouri, the Ohio, and the Arkansas subsystems. Put these subsystems together, and they make up the Mississippi System.

The Mississippi System serves the heart of the country. It serves the area called “the food basket of the country.” Corn, wheat, rice, and soybeans are grown there. Meat, milk, and even sugar are produced there.

The Mississippi System is a network of river highways. Ships can sail inland on it for more than 1,000 miles.

The system is also a great drainage ditch. It drains the extra rain and snow into the ocean. It is a source of water and electricity for cities and farms. It is also a place where men can relax. They can fish and boat on the system.

But the Mississippi has problems. Sometimes there is too much water in the river. Then it floods. Sometimes there is too little water. Then the system is too shallow. It cannot be used as a highway.

In carrying away the wastes of men, the river becomes too dirty. Then it is unhealthy for the people nearby.

To understand this giant Mississippi River System, we must look at the subsystems of the “Father of Waters.”

Upper Mississippi: Well Planned

Water for Cities and Farms The Upper Mississippi subsystem extends from

A River Region: The Mississippi System



where the river begins in Minnesota to St. Louis. Here the Missouri River enters the Mississippi and makes it wider. The subsystem also includes rivers like the Illinois, the Iowa, and the Wisconsin.

Twenty million people live in this upper river basin. Three out of every four of these people live in cities.

St. Paul and Minneapolis are on the banks of the Mississippi just where it begins to widen into a big river. Downstream is Davenport, Iowa.

Farms are important in this basin. There are two major farming areas. One area is the hay-dairy area. This far north, the summers are short. The climate is cool. Corn does not grow well this far north, but grass does. Grass is dried for hay to feed cows in the long winters. Two states in this area are famous for dairy products. They are Wisconsin and Minnesota.

The second farming area is the corn belt. It is farther south, where the summers are longer. This is one of the most productive farming regions in the world. Much of the corn is fed to cattle and pigs.

Corn grows best in heavy soil. Much of the soil in the corn belt is made of fine clay. Clay, however, does not let water seep deep into the ground. The tunnels between the soil particles are

too small. The water is not carried away in the underground passages. Puddles of water just lie on the fields.

A Drain and Cleanser This water slows up the farmer in his work. He cannot work fast in muddy fields. Sometimes his crop is drowned.

There is no problem of dryness in this area. There is a problem of too much water.

Men are forced to dig big ditches in the fields. They lay many rows of little clay pipes in the ditch. Then they cover them up. These pipes are called tiles. The tiles serve as a man-made tunnel. The water is carried off from the fields and into the rivers.

Farmers here want rivers to carry water away from the land rather than bring more to the land. Both city people and farmers want the river to carry away waste water.

Transportation and Recreation People in cities want the river to transport raw materials and factory products as cheaply as possible. They also want to have fun on the river. They want to go boating, fishing, and swimming.

The Upper Mississippi offers these benefits. It has flood control, drainage, transportation, and recreation. It also generates electric power.

There are more than 20 locks between St. Louis and Minneapolis. Without these locks, the river would be too shallow for ships to go upstream at certain times of the year. The Upper Mississippi region is well planned. Man planned carefully and his efforts work well. The region seems to serve the people of that area very well.

Missouri: Tamed

Down from the Rocky Mountains of Montana and Wyoming tumbles the Missouri River. It travels 2,300 miles before joining the Mississippi River near St. Louis, Missouri. Along the way, streams and creeks pour into the Missouri. The land that is drained by the Missouri River is called the Missouri Basin.

This giant basin has varied landscapes. Snow capped Rocky Mountains form the western side of the basin. No cities lie on these steep slopes. Few farms flourish on that rocky soil. But there are sheep ranches in the valleys. There are also mines.

Leaving the mountains, the Missouri slows down and widens. It enters the Great Plains. It flows through thousands of acres of golden wheat. Gone are the former grasslands and buffalo of the Plains. Now they are replaced by cattle ranches and wheat.

Floods and Droughts Nature is not dependable on the Great Plains. Some years there is a lot of rain. Then the Plains are green with young growing wheat. Other years there is little rain. Then the parched Plains are like a great desert.

Sometimes there is too much rain all at once. The rivers rise and overflow their banks. The land is flooded.

The east side of the Missouri Basin is formed by gently rolling prairies. Here the rainfall is great and it falls regularly. People here can depend on the amount of rain they will have. They also know when it will fall. This is a land of corn, cattle, and pigs. The animals grow large and healthy on the corn.

In the past, the Missouri River often overflowed its banks. This 1949 flood damaged many acres of farmland. Today, big dams help control the river.



Along this part of the Missouri are cities like Omaha, Nebraska; Kansas City, Kansas; and Kansas City, Missouri. They process farm products. They mill flour, and butcher beef cattle for the nation. They sell supplies and tools to the farmers of the Great Plains.

Cities grew up by the river because they needed water transportation. Many grew up where there was a shallow place to cross the river. The river is still important to cities for transportation and for drinking water. Industries need lots of good clean water. This is why factories are built in cities by the river.

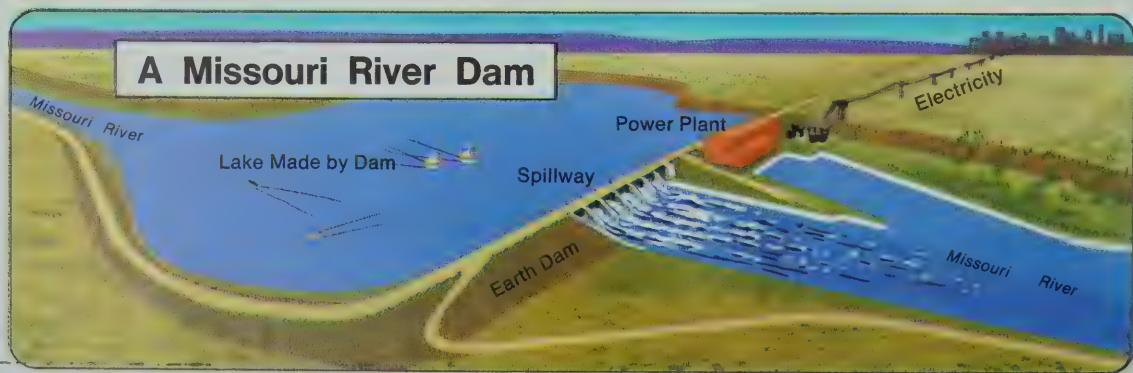
Dangers for Shipping One of the big problems of the Missouri Basin was to keep the level of the river steady. How could men stop the river from flooding some years and nearly drying up in other years? Floods ruined the farmlands. In dry times the river's level went down. Sandbars appeared above the surface.

All the people in the Missouri Basin agreed that something had to be done. But the job was so big! It was too expensive for the states and cities along the river. The government of the United States would have to help!

Dams Control the Water Eight big dams were built, creating huge lakes behind them. Because they were carefully planned, the dams do more than control flooding. Motels, restaurants, and stores have sprung up around these beautiful man-made lakes. They have become vacation centers.

Some of the waterpower behind the dams produces electricity for farms. The government sells the electricity. The income the government earns is used to pay for the cost of building the dams.

The dams help farmers irrigate their fields. Now their farms are more productive. Farmers are now certain of having enough water every year. The



farmers are not limited, therefore, to one crop. They can grow different kinds of crops. This may increase the productivity of their land.

Many specialists are against building more dams. They see no reason for more irrigation. They see no reason to increase a farm's productivity. They claim that the farmer produces too much already. That's why he has a low income. He produces more than people will buy.

Ohio: Cleaned Up

Past Beauty The Ohio River was the most beautiful river in America 150 years ago. Indians sang about it. Explorers praised it in their diaries. Pioneers and travelers wrote poems about its beauty.

The water of the Ohio was clear and pure. It was alive with fish. The river runs from the hills of Pennsylvania to the lowlands of Illinois. There it meets the Mississippi. All along the way, thick forests hugged the river's grassy banks.

Now the Indians and their canoes are gone from the river. Gone are the pioneers and their rafts. The forests, too, are gone.

Today, small but powerful tugboats push long barges up and down the river. They carry fuel oil and gasoline. They come from Louisiana and Texas. They go to Pittsburgh and Cincinnati.

There, they pick up steel products, chemicals, and other goods. They carry them downstream to the cities which are along the Ohio and the Lower Mississippi.

Even today there are some forests along the Ohio River. But there are larger forests of smokestacks. The stacks belong to steel mills, chemical factories, and power plants. The Ohio River Basin is now the industrial heart of America.

Present Riches How did this come about? Because the Ohio River Basin is rich in minerals. The largest soft-coal fields in the world are in Pennsylvania and West Virginia.

These coal fields supply fuel to the aluminum industry and to the electric power plants. They supply the steel industry with coke. Chemicals are made from the coal.

There are other minerals in the Ohio River Basin. There are oil and natural gas. There are limestone, salt, and clay. The mountains of West Virginia and Kentucky are covered with another resource—timber.

There are other riches. This basin has some of the most fertile farmland in America. Ohio, Indiana, and Illinois are great corn- and hog-producing states. The beautiful Bluegrass Region of Kentucky has many horse farms and



In the 1830s the Ohio River was clean and lovely. It curved gently around the growing young city of Cincinnati.

tobacco farms. Central Tennessee produces cotton and livestock.

A Great Highway The Ohio River has always been an important highway to the Mississippi. Pioneers floated down the Ohio River on rafts. They were looking for cheap and fertile land. Flatboats and keelboats carried farm goods to New Orleans. The flatboats were knocked apart at New Orleans and sold for lumber. The keelboats were poled back up the river. This was hard work, because it was against the current. So, only lightweight goods or very valuable goods were carried upriver.

After steamboats were invented, people and goods could be carried upstream easily. Steamboat traffic grew. But steamboats were not very depend-

able. Many were wrecked when their boilers exploded. Others ran aground on sandbars or caught on snags.

The Ohio River drops 429 feet before it joins the Mississippi. So there were many waterfalls in the Ohio. At one time, it was dangerous for steamboats to pass over these falls. Freight had to be unloaded at the falls above Louisville. It was carried past the falls. Then it was loaded on another boat and carried downstream.

Before long, people demanded better navigation on the river. Army engineers cleared stumps and floating trees out of the river. Locks and dams were built. Now freight did not have to be carried around the falls.

In the 1820s, the state and federal governments began to build canals to



Today, Ohio River cities like Cincinnati are centers of industry. As the cities have grown, the river has become polluted.

connect some rivers. These canals also connected rivers to the Great Lakes. The Ohio River became part of a large transportation network. Ships moved from New York City up the Hudson River. Then they entered the Ohio River by canal. Then they could sail down the Ohio to the Mississippi and from there to New Orleans.

Later there were more improvements. Congress asked the Army Engineers to dig a 9-foot channel in the Ohio River. It went from Cairo, Illinois, to Pittsburgh, Pennsylvania. Now, bigger ships could move faster on the river. The United States built 46 locks and dams on the Ohio River. In the 1960s, the old locks and dams were replaced by 19 bigger ones. River travel is now even faster.

Some of the new tugboats go from Louisville to New Orleans and back again in eleven days. They push long lines of barges. Each line of barges can carry more goods than ten loaded freight trains.

Federal taxes pay for the cost of improvements on the Ohio River. Congress declared this was fair because everyone benefited from river transportation. But the railroads complained. They said that shippers did not have to pay taxes for the use of the water. But the railroads had to pay taxes to transport goods by rail.

A Highway Becomes a Sewer The changes in the Ohio River Basin in the last 150 years have brought great cities and industries to the basin. The changes

have also brought problems. Many industries and cities dump so much waste into the river that people call the Ohio River a sewer. Leaking barges and oil pipelines pollute the river. Waste from abandoned coal mines flows into the river. The fish are poisoned. The river cannot be used for recreation.

Flooding Another problem of the Ohio River Basin is flooding. In 1937, the Ohio River flooded and caused damages of \$420 million. Some 500,000 people were driven from their homes, and many people lost their lives.

For a long time, flood control was considered a local problem. Landowners built their own levees and dams for their own protection. Cities did the same. But dams and levees here and there didn't stop the flood damage. There had to be a flood control program designed to work for the whole river basin. The program cost more than the state and city government could afford. The federal government began to spend money to control floods.

Solving the Problems People knew that something had to be done about the river pollution. They knew that the states along the Ohio River had to work together on the problem. In 1948, eight states in the Ohio River region signed an agreement. They agreed to clean up the river. They planned ways

to control the wastes that were dumped into the Ohio River. By cooperating the states did clean up the river. They want to keep it clean.

Electronic devices have been placed along the river. They measure the amount of pollution. They warn engineers when the danger level is reached.

To fight floods, the United States Army Engineers have built 40 big reservoirs in the Ohio Basin. Water is held in the reservoirs when the river is high. Water is let out of them when the river is low. These reservoirs maintain a steady water level in the river. This helps river transportation.

Whatever a farmer or an industry or a city does to the river affects other people's welfare. The Ohio Basin, like every river basin, demonstrates that people in the basin depend on each other. Their welfare is increased when they cooperate with one another.

Arkansas: Linked to the World

The Arkansas subsystem begins in the western part of the Mississippi System. The Missouri drains the northern plains and mountains. The Arkansas drains the southern plains and mountains of the system.

The Arkansas is a long river. It passes through various landforms and climates. The river is unpredictable. It has been both a blessing and a danger

to those who live near it. On the western side of the Arkansas Basin are the high, snow-topped Rockies of Colorado. The river begins 14,000 feet up in the mountains. It flows down the slopes and out onto the southern part of the Great Plains. It travels 1,450 miles before it joins the Mississippi River near Greenville, Mississippi.

When the Arkansas comes out of the mountains, it enters the semi-arid land of the Great Plains. *Semi-arid* means dry part of the time. Sometimes this area is bone-dry. Other times it is nearly drowned by cloudbursts. When these downpours occur, the rivers cannot carry away all the water. The river overflows its banks. It floods. The land is flat here, so the floodwater spreads out.

As the river flows farther east through the southern Great Plains, it slows down. It twists and turns. It becomes even slower and shallower.

Sandbars and Rich Farmland The river finally reaches the wheat belt of Kansas. Sandbars appear. The river moves farther east and south. The rainfall increases. Larger towns appear along the river.

By the time the Arkansas reaches the Mississippi River, it is carrying tons of rich mud and silt. *Silt* is a fine soil. The Arkansas carries enough mud and silt every year to fill a freight train 16,000 miles long.

The Arkansas slows down again when it reaches the Mississippi. The mud and silt sink to the bottom. This area is good for farming. The silt enriches the soil. Large amounts of cotton and soybeans are grown here. It is also a great rice-producing area.

Improving the System Scientists wondered how best to use the Arkansas River. Its problems were similar to those of other rivers. Sometimes it flooded, and sometimes it was too shallow. The silt enriched the soil but clogged up the river. So the Army Corps of Engineers suggested building dams to solve the problems.

The dams would control the flow of the Arkansas River and its branches. The dams would also produce electricity. A good supply of electricity would encourage businessmen to build factories in the river basin. The river could be used to transport factory products cheaply. The engineers also said that locks should be built to help barges navigate the dams.

They urged that trees be planted on the hillsides. Trees would stop erosion and silt. These improvements would make the countryside more beautiful.

Who Pays the Price? All these projects were approved by the United States Congress. People all over the country would pay for them. Even those who

do not live on the river system would pay in the form of federal taxes. The cost would be millions of dollars.

Many people in other areas did not like this idea. They asked why they should pay to improve the Arkansas River. The river didn't benefit them. They said people near the Arkansas River Valley were exaggerating the benefits. People disagreed about whether the benefits were worth the price.

It was a fine idea, some said, to make the land beautiful. But how much is beauty worth? It may be worth a lot to some. It may be worth very little to others.

Improving the land might make people happier. But exactly how much money does it cost to bring happiness?



One of 17 new dams on the Arkansas River subsystem. The lock, on the right, lifts boats and barges past the dam.

Questions like these caused disputes and confusion.

Congress insisted that federal taxes should pay for the river improvement. Every taxpayer in the country helps pay for it.

Highway to the World By 1971, the projects were completed. In June of that year, the President of the United States flew to the newest seaport in the United States. Where do you think it was? Right in the middle of the country. It is the port of Catoosa, Oklahoma, a few miles east of the big city of Tulsa.

The Arkansas River subsystem now connects that region directly with the Gulf of Mexico.

President Nixon opened the new waterway, which cost over \$1 billion. It allows riverboat traffic to travel from New Orleans into the heart of Oklahoma. The waterway is one of the most expensive in the United States. It has 17 locks and dams. Larger boats can travel on it. The waterway helps keep the Arkansas subsystem from being flooded.

The new port and the waterway are good for farmers. They are also good for the oil and gas industry, and for the towns and communities along the Arkansas Basin.

Lower Mississippi: Base of the System

All five of the subsystems of the Mississippi River System are connected like branches on a tree to the trunk. The trunk of the Mississippi System is the Lower Mississippi. The region starts at the lowest branch of the system—the Arkansas River. It extends down to the base of the trunk, which rests in the Gulf of Mexico.

The Delta Many years ago, the river's trunk was much shorter. But each year, its branches brought down tons of mud

and silt from the higher lands. The river carried it out a short way into the Gulf. Then it was deposited on the ocean floor. So much was deposited that it finally piled up. It piled up above the surface of the water and created a plain. As years went by and flood followed flood, more silt piled up. The plain was built farther and farther out into the sea. Such a plain is called a *delta*.

The trunk of the Mississippi is a crooked trunk. The river twists and turns back and forth over its flooded plains. Sometimes it shifts its course. One year it might flow down one side

The Mississippi River is wide and deep at New Orleans. Big ships from all over the world can dock there. New Orleans dock workers load and unload everything from tractors to tangerines.



of the river valley. The next year it might flow on the other side of the valley. Year after year, the floods build the plain wider and longer.

Flooding also creates natural walls along the river. When a river floods, it deposits most of its load of silt and sand along the bank. This creates a wall. Hundreds of floods later, more and more silt has been deposited along both sides of the river and on the riverbed. The river becomes narrower and shallower. Then the river flows above the surrounding flood plain.

Rich but Dangerous Land Men were happy when they first came to the Lower Mississippi. The rich, level plain seemed a perfect place to settle and farm. People cleared the land and built homes. But in the spring, the river flooded. It covered their farms. The next spring, and every spring, the flood came. It ruined homes and killed cattle. People were discouraged. They moved away from the plain.

Today for miles along the river there is little sign of human activity. Here and there on some high ground by the

Oil barges on the Intracoastal Waterway. The oil may go up the Mississippi from New Orleans. Or it may be loaded into sea-going ships.



river, men have built a town. But sometimes the river changes its path and moves away from the town. The towns are left landlocked. Then a canal has to be dug to connect the town with the river. This is what happened to Vicksburg, Mississippi.

The Mississippi is a large water highway. It connects the Ohio River with

the Arkansas River. Steel from Wheeling, West Virginia, can be sent easily to Tulsa, Oklahoma.

Oil from Texas can go to the Mississippi through the Gulf Intracoastal Waterway and then up to Cincinnati or Minneapolis. The river connects the interior of the United States with the whole world.

SEA REGIONS

The sea, like the land, is different from place to place. The sea has regions also. Each sea region has something that is special about it.

There are cold and warm regions in the sea. There are regions that are saltier than others. The sea is deep in some places. It is shallow in others. The ocean floor is sandy in some places and rocky in others. Each fish or sea animal has its own special part of the sea. Some fish, like the herring, live near the surface. They can be scooped up in nets. Salmon live in the sea but swim up rivers to lay their eggs. They are caught in large numbers as they head up these rivers. Lobsters are caught in traps on the sea bottom.

From the sea comes food for both people and animals. Out of the sea,

men take salt and other chemicals. From animals in the sea, they get fur and pearls. From under the sea floor, they pump oil and natural gas for fuel and other uses.

Fish and Sea Animals

Men know the resources in each sea region. They harvest seals in the icy waters off the Aleutian Islands. They catch the king crab off Alaska's rocky coast. The Maine coast is famous for lobster and herring. Men harvest clams near the steep cliffs of Oregon's Pacific Coast. They get shrimp from the Gulf of Mexico. In Chesapeake Bay, they find oysters.

Far out in the Atlantic, between Massachusetts and Ireland, fishing fleets haul up millions of codfish.



The Pacific Ocean from northern California to Alaska is full of salmon. Men hunt the tuna fish in the sea regions where the water is warm.

Fishermen Catch What Sells Best

Most fishermen do not catch fish to eat them. They catch them for profit. If they did not earn a profit, they would not put out to sea. Fishermen try to catch the fish that bring them the most profit.

When the price of a sea product is high, men will sail far and wide to catch it. For example, 100 years ago there was a large demand for whale oil. The price was high. American sailing ships sailed all over the world looking for whales. Then oil was discovered in Pennsylvania. This made the price of whale oil fall. Oil from the earth could be used instead of whale oil. It was cheaper than whale oil, too. So American whalers almost disappeared from the sea.

Now a new use has been found for the whale. Its meat is used in canned pet food. A new demand has risen for whales.

The demand for fish changes depending on:

Income The income of people in the nation help fishermen decide what to

catch. When people have higher income, they can enjoy a greater variety of foods. They can afford fish that are expensive. Shrimp, for example, are more expensive than many fish. Today, many Americans can afford to buy shrimp. So more people are harvesting and selling shrimp.

Market Size The size of the market determines what fish will be caught. Not many fish can be sold in a local fish market. For example, some time ago live lobsters could be bought only in restaurants and fish stores along the New England coast. The market was small. But today, airplanes fly live lobster to restaurants and stores all over the United States. The market now is big. There are better ways now of preserving and transporting seafood. Fishermen now can sell all the lobsters they can catch.

Taste The tastes of people help fishermen decide what to catch. These tastes change from generation to generation. Dried, salted codfish made a good gravy for potatoes and bread some years ago. Today, many Americans have never tasted codfish gravy. On the other hand, people used to eat very little tuna fish. Now people eat tuna all the time. Fishermen now sail to sea in huge ships hunting tuna.

Custom What the fisherman catches also depends on customs. For many years, American Roman Catholics ate fish on Friday. Many New Englanders were Catholic, so New England fishermen had a large market for fish. Then in 1966, Pope Paul VI changed the custom. Roman Catholics in the United States can now decide for themselves whether or not to eat fish on Friday. Many chose not to eat it. Suddenly, the income of New England fishermen fell. For every dollar they earned, they now earn only eighty-eight cents.

New Uses Years ago, there was little use for the fish called menhaden. It did not taste good to humans. But today menhaden are used to make fish meal. The meal is fed to pigs and cows. Now, many fishermen earn their living catching this fish that only animals eat. Drug companies today make fish livers into vitamins. Chemical companies make other parts of fish into fertilizer. These companies now provide a new and larger market for the fishermen.

Man Threatens the Sea's Resources

Fish is a resource that can be renewed. As older fish are caught or die, baby fish hatch and take their place. As long as men do not catch too many fish or

let them die in other ways, there will always be plenty of them in the sea.

But sometimes men do catch too many of one kind of sea creature. This happened in certain whale-catching regions. Some kinds of whales were caught faster than baby ones could be born.

Sometimes men disturb the places where the fish eggs are hatched. Cities pour sewage into the ocean. Factories pour wastes into it. Great ships leave oil wastes in the sea.

When this happens, the baby fish die. The story of the Chesapeake Bay oyster is an example.

Where Oysters Live The oyster is a sea animal. It has a soft body. The body lives inside a hard shell. The shell is the oyster's home. The shell homes lie on top of old empty shells. These underwater layers of oysters resting on the old shells are called *oyster beds*.

Oyster beds lie in shallow waters off our coasts. The finest ones are in Chesapeake Bay. The word *Chesapeake* is an old Indian word. It means "great shellfish."

Chesapeake Bay has hundreds of miles of protected shoreline. It is a natural place for oyster beds. The shore is dotted with many little towns. The towns make their living off the oysters and crabs in the bay. Each town has

its gray, weathered docks, oyster boats, and packing-houses.

On the docks, you can always find a group of old oystermen. They tell stories of oystering in the old days. They heard the stories from their fathers and grand-fathers. Oystering is a family tradition.

The men tell stories about the days when oystering was a bigger industry than it is today. Oystermen used to take 125 million pounds of oysters from the bay every year. Today, they take less than 20 million pounds a year. There are not so many oysters in the bay. Because they are fewer, they are more expensive.



What Happened to the Oysters? Why are there so few left? What has gone wrong in Chesapeake Bay?

Many changes have taken place over the years. Some of these changes have been caused by nature. Some changes have been caused by men. But almost all have been bad for the oysters of the bay.

There have been changes in the climate. The bay water grows too warm at times. It grows too cold at other times. This rise and fall of temperature robs the water of oxygen. Oysters need plenty of oxygen in the waters.

In 1959, a natural enemy of the oyster showed up in Chesapeake Bay. The scientists called the enemy MSX. MSX is a tiny water animal. It is so tiny that it can be seen only with a microscope. MSX has spread farther north each year. Once MSX attacks an oyster bed, there is little hope of saving it. Scientists may soon develop an oyster that does not die when it is attacked by MSX. But meanwhile oysters are getting fewer.

Other changes in the bay have been caused by men. Sometimes the cause of the change was far away from the bay's waters. Far up the rivers, forests have been cut from the hills and mountainsides. The hillsides are bare. So when it rains the rich topsoil is washed down the rivers and into the bay. This



By law, oyster dredges may be used only two days out of the week on Chesapeake Bay. This law helps keep the oyster beds from being destroyed.

fine soil, or silt, has settled on top of the oyster beds. It has smothered many oyster beds in the bay.

The problem has been made worse by too much fishing. Living oysters draw water in and pump it out. This is the way they get their food and oxygen. A single oyster may pump more than 15 gallons of water in a day. When great numbers of oysters are pumping water, the water is stirred up. The silt cannot settle down and the oysters are protected. But when too many oysters have been taken from a bed, there are not enough left to keep the water stirred up. The silt settles and chokes the oysters that remain.

When too many oysters are taken from a bed, there are not enough left to lay eggs. Then there are no new oysters to replace those that are harvested. Each year there are fewer and fewer oysters. Finally the bed dies.

The water in some parts of the bay has become very dirty. Oysters cannot live in it. Great manufacturing and shipping cities like Norfolk, and Newport News, and Baltimore are located around the shores of the bay. The wastes of these cities flow out and dirty the waters of the bay.

Faced with the problem of saving oyster beds, the governments of the Bay States acted.

Protective Laws New laws make oyster harvesting harder. Oysters near the shore must be harvested with tongs. Oyster tongs are like metal rakes attached to long poles. These tongs are used for dragging oysters from the bottom by hand. This is a slow, old-fashioned way to harvest oysters.

Out in the open bay, oysters must be pulled from the bottom by oyster dredges, or scoops. The dredges must be carried on sailing ships. Dredging oysters from sailing ships is slow and difficult. Dredges carried on powerboats can scoop up oysters much faster, but laws forbid it. The state of Maryland permits powerboat dredges to work only on Mondays and Tuesdays.

Another law forbids oystermen to take oysters less than three inches long. This is supposed to keep enough egg-laying oysters in the bay.

All these laws have been made to cut down the oyster harvest. But other people are looking for ways to help nature produce oysters faster.

The state of Maryland dumps five million bushels of empty shells into the bay each year. These shells create the base for new oyster beds.

The states of Maryland and Virginia try to control the dumping of wastes into the bay. This makes it a clean and healthy home for oysters.



Water pollution is harmful to fish and plant life. Trash and oil in the water are ugly. Some other kinds of dangerous water pollution cannot even be seen.

Oysters are fixed to one place. They are attached to their oyster bed just as vegetables are attached to the ground. Some men think that oysters should be farmed in Chesapeake Bay. They say the bottom of the bay should be divided into oyster farms. They might be from ten to thirty acres big.

The oyster farmers could lease the farms from the state. Some would specialize in oyster seed farms. They would sell good seed oysters to other farmers. These farmers would then specialize in growing older oysters for market. The oyster beds of Chesapeake Bay would then be taken care of by the farmers who leased them. This would divide the work of taking care of the oysters. Each farmer would be responsible only for his oyster bed. A good farmer would take just enough oysters to give him a decent profit. He would know that if he took too many oysters, he would destroy the oyster bed. This would ruin his chance of future profits.

Even now some counties in Maryland permit oyster beds off their shore to be leased. But other counties do not. With these different laws, it is hard to improve the oyster beds.

Competition for Use of Land and Sea

Men now know that the use of the sea is not much different from the use of

the land. Both can be used in many ways. There is increasing competition for the use of both.

In the Gulf of Mexico, men build oil derricks where fishermen catch shrimp. In the Northwest some men build dams where others catch salmon. In any fishing region near cities, pleasure boats compete with fishing boats for space on the water.

When some fishermen lowered their net off New London, Connecticut, not long ago, it became tangled with a cruising submarine!

The world is becoming more crowded. Men have increased their need for the resources of the sea. States and nations will have to plan together to reduce the confusion. They must plan to make the best use of the sea regions for everyone.

Test Yourself

1. What uses has man made of rivers and river systems?
2. How did the invention of the steamboat affect the use of rivers?
3. In what ways have scientists and engineers been able to alter rivers to suit man's needs?
4. Why is the demand for fish and fish products changing over the years?

SHRIMPING ON THE GULF

This is my harbor, in my hometown, Delcambre, Louisiana. Delcambre is just a few miles from the Gulf of Mexico. The Gulf is full of shrimp. All of these boats are shrimp boats. We call them *trawlers*.

My dad owns a trawler. My dad's name is Alvin Weekly. Mine's Corey. We call our boat the *Jacob*. In the summer, when school is out, Dad lets me go shrimp-ing with him on the *Jacob*.

A shrimp-ing trip begins early in the morning. Dad pilots the *Jacob* to the ice house. We take on a big load of ice. Our catch of shrimp will have to be kept cold and fresh.



Then we head down a bayou to Vermilion Bay. We cross the bay and enter the Gulf. We're not alone because shrimp boats trawl together. They form a fishing fleet. I like to watch the other boats. A trawler with her nets spread out is really beautiful. It looks more like a bird than a boat.

Finally Dad and the other men think we've found a good spot. We lower the nets and drag the sea for shrimp. Sometimes we get a big, bulging netfull. Other times we don't. Shrimpers need luck, just like other fishermen.



We work like that for four or five days. We cook, eat, and sleep right on the boat. Finally the hold of the *Jacob* is full of shrimp. Then it's time to go home.

On the way back in, we pass near one of the big offshore oil rigs. It stands on huge stilts that reach all the way to the floor of the Gulf. Its job is to separate oil from natural gas. Then it pipes them both to the shore.

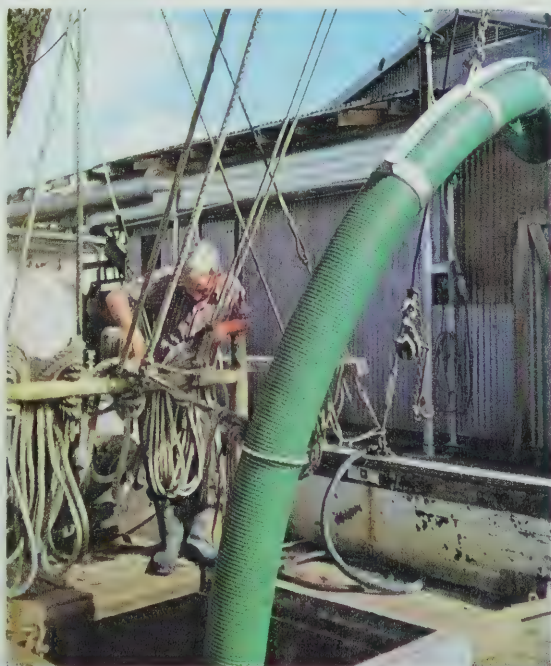




Dad knows some of the men on the rig. Some of them live in Delcambre. They work on the platform for a week. Then they come home for a week. They make good money. Maybe when I'm a little older I'll get a job on a rig. That way, I can save up to buy my own trawler.

Back in port, the first business is unloading the shrimp. A big green hose sucks them out of the boat like a giant vacuum cleaner. Then the shrimp are frozen or packed in refrigerated trucks. Then they are sent on a long ride North to cities like New York and Chicago.

While we're unloading, Dad talks about the catch with other fishermen. Many of the men speak French. Their ancestors were French people who came here from Canada. That was a long time ago. Dad speaks French, too. I can understand a little of it.



I help Dad clean up the *Jacob*. Then we hurry home. After five days at sea, Mom's cooking tastes better than ever. I don't even mind the crowd in the kitchen—my seven brothers and sisters!

After dinner, I might go down to visit Grandpa. Grandpa makes and mends nets by hand. There aren't many men who know how to do that anymore.



In the summer, the sunlight lasts till nine or ten o'clock at night. Sometimes just before dark, I wander down to the harbor again. It's just as pretty at sunset as at sunrise.



WHAT DID YOU LEARN?

1. How would you define a natural region?
2. Do you live in or near any of the regions described in this unit? If so, can you add any information about that region to what you have already read?
3. The first settlers of our country tried to fight and conquer nature. They did not try to live with it. What do you think it means to “try to live with nature?”
4. Changes in income, taste, and custom have affected the market for fish. Explain how these three factors affect the market for other resources such as oil and lumber.
5. National forest areas have been set aside to preserve trees. Can you think of any other benefits people get from these areas?
6. Why can we call the Ohio River Basin both a river region and a mineral region? What other types of regions might it be called?
7. Many inventions such as barbed wire and the steamboat have changed the way man has been able to use various regions in our nation. Make a list of the inventions you can think of that have helped man alter the regions you have just studied. Then describe how the invention, or scientific discovery, has been useful.
8. Today, more than ever before, we are concerned with problems of pollution. Of all the regions you have just studied, which ones do you think are the most likely to have problems of pollution? Why? What, if anything, do you think can be done about it?
9. One of the newest sources of oil is the ocean floor of the Gulf of Mexico and the Pacific Ocean. Can you think of any problems which might arise from the drilling for oil in our coastal waters?
10. You have read about many ways in which man has been able to change natural regions. In what ways do you think regions might have changed the lives of the people who live in them?





Unit Two

REGIONS MADE BY MAN'S WORK

Man's work can create regions. Man's work can also change regions.

A manufacturing region is made by man. He builds factories and roads and great cities. Such a region has no real borders. It is made by man to serve his needs.

But natural, geographic regions can be changed by man, too. He can change them into the kinds of regions he wants.

It is man's work that dominates these regions. It is man's work that makes them important.

Left: Highway interchange,
Westchester County, N.Y.



Chapter 4

The Manufacturing Region

In this region, there are forests of smokestacks. There are fields of factories. There are also rivers, but some are made of concrete. Along these wide highways, traffic moves day and night.

This is a region of crowds, smoke, noise, and constant motion. It is also a region of great cities, great wealth, and huge buildings.

This region is the industrial heart of the United States.

This is the region where the action is.

The region is like a great rectangle in the northeast part of the United States. It covers only one-tenth of the nation's land. But almost half the people live in the region.

Six out of every ten industrial workers in the United States work in this region.

Sixty cents out of every dollar spent in manufacturing is spent here.

There are 425 of the 500 largest manufacturing companies in this region. 42 of the 50 largest trading companies are in the region.

Out of 50 of the largest banks, 35 are in the manufacturing region.

Left: Steel Mill, East Chicago, Indiana

WHERE THE ACTION IS

What Is Manufacturing?

Manufacturing takes place when raw materials are changed into finished goods by a combination of men's hands and machines.

Sometimes the change is small. For example, man grinds wheat into flour. He cures and slices bacon. He freezes fruits and vegetables. In these cases he does not change the raw materials very much when he turns them into finished goods. So he does not add much value to them. This type of manufacturing is called *processing*.

Sometimes man changes the raw materials a great deal when he turns them into finished goods. For example, it takes a lot of work to turn iron ore into cars. In these cases men add a lot of value. They add their muscle power. They add their brain power. This kind of manufacturing is called *fabricating*.

It takes more time, energy, and money to fabricate goods than to process them. So more value goes into fabricated goods. This is why workers who produce fabricated goods earn more than those who process the raw materials. It is also why fabricated goods are often more expensive than processed goods.

Manufacturing is usually done in factories. A factory usually produces a large amount of one kind of product.

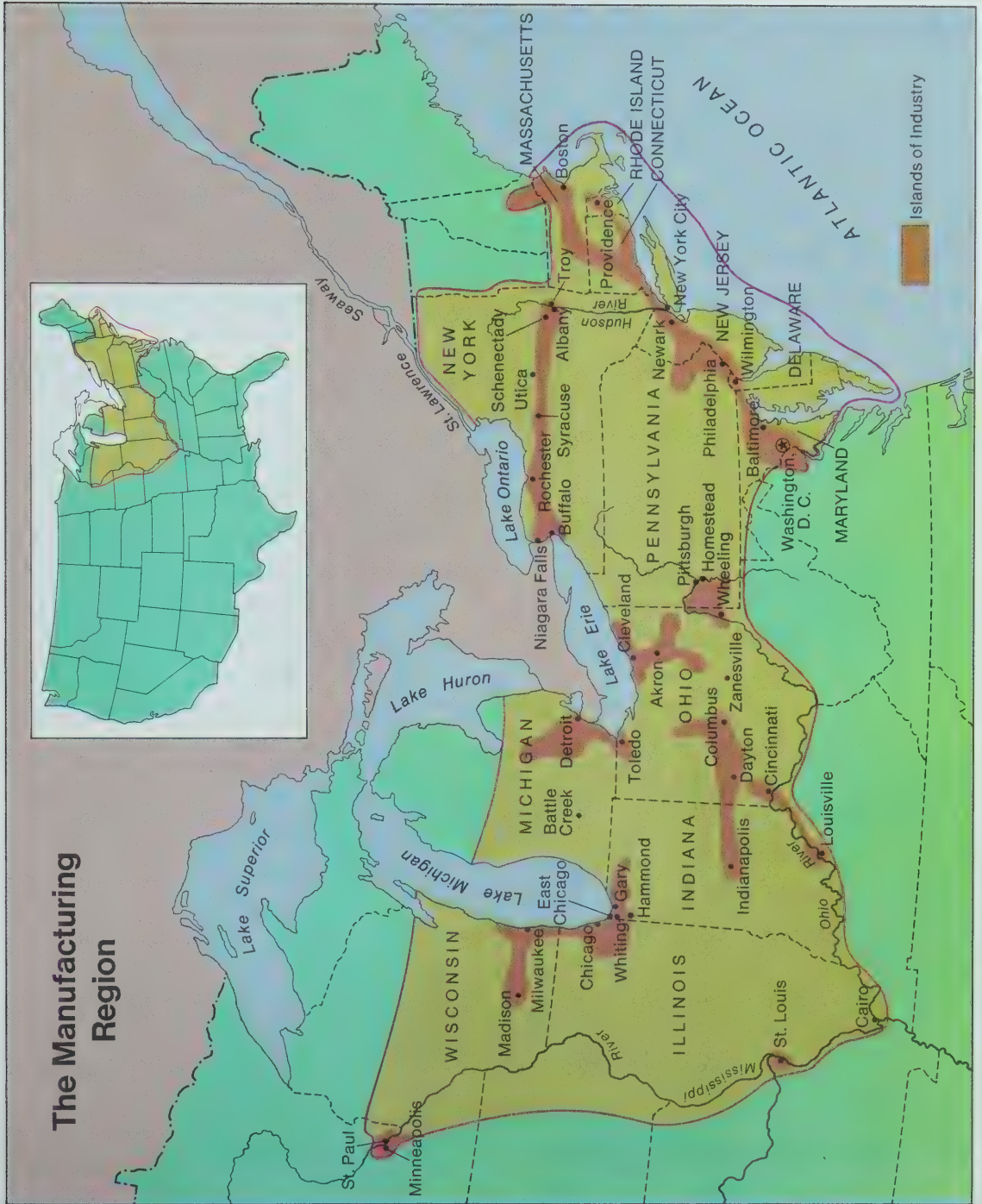
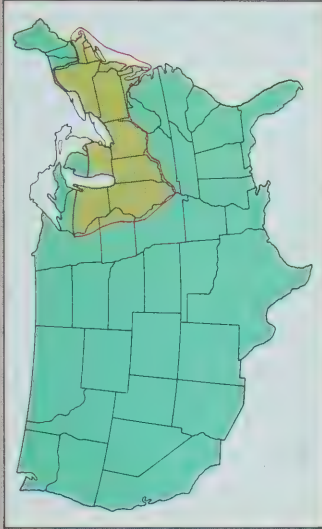
Two Kinds of Goods All goods produced by factories can be divided into two large groups. One group is called *durable* goods. Durable goods are those like refrigerators, furniture, and cars. They can be used for a long time. They don't wear out quickly. *Nondurable* goods are clothing, food, and shoes. When food is eaten, it must be replaced. It must be replaced right away.

Industry Is in Islands If we fly over the manufacturing region we may be surprised. Industry is not spread evenly throughout the region. Industry is grouped into islands.

These manufacturing islands are surrounded by a sea of pastures, fields, and orchards. Some of the islands are made up of a single large city. Some are made up of several large cities near one another. Smaller towns lie between the large ones.

Some islands produce different kinds of products. They do not specialize in any one product. Other islands of industry do specialize. They are known for one product more than any other.

The Manufacturing Region



MANUFACTURING ISLANDS

The Island Serving Farmers

In the northwest corner of the region lie the Twin Cities of Minneapolis and St. Paul. They are on opposite banks of the Mississippi River.

The Twin Cities produce a variety of goods from mending tape to equipment for launching missiles. But perhaps they are best known as islands of flour-milling and meat-packing. To the east of them are the dairy farms of Wisconsin. To the west are the great farms and ranches of the Great Plains. These farms and ranches produce corn and wheat, cattle and hogs. The products must be processed and prepared. So they are sent to Minneapolis and St. Paul. There, the grains and the livestock of the Great Plains are turned into packaged products for the rest of the country.

The Island of St. Louis

Our airplane flies south, following the Mississippi River. We pass over many dams. They keep the channel of the river at about the same depth between the Twin Cities and St. Louis. The river is dotted with barges carrying goods and raw materials up and down the river. Most of this cargo must pass by St. Louis.

The St. Louis manufacturing island is on the southwest corner of the manufacturing region. It produces almost everything—steel, shoes, spacecraft, chemicals, foods, and cement. St. Louis is also the home of the biggest brewery in the United States. After Detroit, St. Louis is also the biggest auto-producing center in the country.

The Island Around the Tip of Lake Michigan

From St. Louis, we fly to the Milwaukee-Chicago-Gary area. This island covers the western and southern shores of Lake Michigan.

German immigrants helped settle Milwaukee a century ago. They brought with them skills in brewing beer and making machinery. These skills shaped Milwaukee's industry.

Huge turbines were made in this city. They were used to harness the power of Niagara Falls. Milwaukee made the steam shovels that helped dig the Panama Canal. Now Milwaukee also makes space missiles. It still specializes in brewing fine beer.

Chicago has more than 14,000 factories. The city has many expressways. Some are eight lanes wide. Thousands of cars and trucks go in and out of the city every day.

Chicago has been a busy city for many years. Back in 1914, Carl Sandburg, the famous poet, wrote about Chicago:

*Hog Butcher for the World,
Tool Maker, Stacker of Wheat,
Player with Railroads and the
Nation's Freight Handler;
Stormy, husky, brawling,
City of the Big Shoulders. . .*

*Bareheaded,
Shoveling,
Wrecking,
Planning,
Building, breaking, rebuilding. . .*

Today, Chicago factories produce all kinds of manufactured goods. Some Chicago factories make refrigerators or machinery. Factories turn the rich harvests of Illinois farms into cookies,

cereals, margarines, and cheeses. Other factories produce equipment for radios, televisions, and telephones. Chicago produces more of this equipment than any other city in the country.

Busy Chicago is the hub of this whole industrial island. East of Chicago lie other cities. They are part of this industrial island. The cities are East Chicago, Gary, Whiting, and Hammond. Like Milwaukee, they form a specialized part of the industrial island. It makes one special product—steel. Some of America's largest steel companies have huge plants here.

Steel produced in Gary and East Chicago moves to the next specialized island in this great manufacturing region. It moves 200 miles east to Detroit.

Heavy industry in East Chicago, on the shore of Lake Michigan.



The Island that Makes Cars

The city of Detroit and nearby cities form a very special manufacturing island. It is the automobile capital of the world. In the Detroit area, ten different plants put automobiles together. Forty more plants produce parts.

More than one-third of the jobs in the Detroit island are in manufacturing. Nearly half these jobs are in the automobile industry.

But this area became the automobile capital of the world almost by accident. It happened because people like Henry Ford, Ransom Olds, and the Dodge brothers lived there. They were men who were interested in trying to make a carriage run by its own power.

Most of them were good mechanics. They were also willing to take risks.

These new cars have almost reached the end of a modern assembly line. This is a General Motors plant in Detroit.

Today, cars are named after these men. They roll off the assembly lines of the Detroit area. Most of these are put together in the Detroit industrial island.

Natural Gas Started an Island

Flying south from Detroit, we come to another manufacturing island. It is made up of small and medium-sized cities in central Indiana and Ohio. It includes the state capitals of Indianapolis and Columbus.

Manufacturing came to these cities many years ago when natural gas was discovered nearby. Glassmakers like to use the steady, hot flame of burning natural gas. Many glass factories moved to Indiana and Ohio towns to use this fuel.



The deposits of natural gas were not as large as people thought. Gas was wasted. Gas lights burned day and night. They lit all the towns in the gas belt. Since no effort was made to save the gas, it soon ran out.

Some industries moved away. But by then, railroads provided good transportation for goods and raw materials in Indiana and Ohio. So some industries stayed and prospered. Indianapolis and Columbus became manufacturing centers.

Today, Columbus produces tiny ball bearings and big airplanes. It also produces automobile parts and television tubes.

Dayton, Ohio, was the home of the Wright brothers. They invented and built the first successful airplane. Orville Wright made the first successful flight. Dayton manufactures airplane parts and computers. It is also the home of the National Cash Register Company. The company produces cash registers and computers.

Indianapolis is surrounded by farm country. This makes it a good center for canning food. The city specialized for years in packing pork.

Eli Lilly and Company began there. It supplied farmers with animal medicines. Today, the Lilly Laboratories make drugs and medicines for people.

Indianapolis is like the hub of a wheel. Trains and highways enter the

city from all directions. Indianapolis produces 1,200 different products. Many of them get shipped to market on these highways.

Indianapolis has huge stockyards. Raising corn-fed hogs is very profitable. Large meat-packing plants are handy in nearby Columbus.

The Island Along the Ohio

South of the Ohio-Indiana area, our airplane flies over another manufacturing island. It is along the Ohio River. The area developed because of the river. Goods can be transported on it cheaply and easily.

This region's largest cities are Cincinnati, Ohio, and Louisville, Kentucky. About 150 years ago, these cities were boat stops on the busy highway called the Ohio River. This was the busiest route for settlers going west.

The Ohio River was the easy way to ship goods south. The goods were loaded on flatboats. The boats floated down the Ohio, past Cairo, Illinois. Here the Ohio River flows into the Mississippi River.

Cincinnati produces chemicals. There is a good reason for this. Years ago, Cincinnati was a busy market town for frontier farmers. They brought many hogs to Cincinnati. People called the city "Porkopolis." When hogs are processed, there are by-products. One by-product is fat.

Chemists came to Cincinnati and turned the fat into useful products. They turned fat into soap. So Cincinnati became a soap-manufacturing center. Later, the soap companies became chemical companies. Today, Cincinnati produces all sorts of chemicals. There are detergents, plastics, paints, and many other products.

When we think of Cincinnati, we think of its soap industry. But each year Cincinnati makes more and more steel. Other factories use it to make heavy machines and tools. They use steel to make parts for airplane engines, trucks, and railroad cars.

The area along the Ohio River has lots of cheap power. It has plenty of coal from nearby states. Power plants turn the energy of the coal into electric power. Factories then use it.

One of the most important products of this manufacturing island is aluminum. It takes a great deal of electricity to make aluminum. Aluminum factories were built in the Ohio River Valley, where there is lots of cheap electric power.

The Birthplace of Steel

We pass over Wheeling, West Virginia. Soon we are over Pittsburgh, Pennsylvania, the steel city of the United States.

Pittsburgh and Wheeling are the center of a manufacturing island. This island specializes in steel. Most of the

manufacturing jobs are in steel mills and factories.

Akron, Ohio, is also in this manufacturing island. It manufactures parts for the automobile industry. Automobiles need rubber tires. Many other parts of the automobile are made of rubber. Akron is the country's biggest producer of rubber products.

In the 1920s, most of the jobs in Akron were in the rubber industry. Many people depended on that one industry for their livelihood. When that industry slowed its production, the whole city suffered.

Today Akron has brought in other kinds of factories. They produce plastics and ceramics. They create many new jobs.

The Island Along the Erie Canal

The next industrial area is along the old Erie Canal.

The Erie Canal opened in 1825. It connected the Great Lakes with the Atlantic Ocean. The canal itself ran from Buffalo on Lake Erie to Albany on the Hudson River. The beautiful Hudson is a straight waterway to New York City.

Those who built the Erie Canal dug it across a natural flat pathway. It ran across the state of New York. Later railroads and highways followed this same flat path. Many cities like Roches-

ter, Syracuse, and Utica grew up along the canal. It gave them an easy way to transport their goods and raw materials.

Businessmen built factories in these cities. They produced things needed by settlers further west. Plows from Buffalo dug up the fields of frontier farms. Stoves from Albany and bricks from Rochester went into western farmhouses.

Factories attract other factories. Today 82 out of every 100 people in New York State live along the route of the old Erie Canal and the Hudson River. Ninety-two out of every 100 factories in the state are also located there.

What does this island produce today? Where do the products go? Flour from Buffalo's mills is carried through the St. Lawrence Seaway. It is carried by ships to Japan and Thailand. Steel machinery from Buffalo goes to Le Havre, France, and Alexandria, Egypt.

Rochester is the world's greatest producer of cameras and camera equipment. One out of every three jobs is in this industry. Rochester is the home of both the Eastman Kodak Company and Xerox Corporation.

Factories in Rochester also produce delicate optical products. They are used in eyeglasses, telescopes, and spacecraft. They produce dental equipment and thermometers.

Syracuse factories produce typewriters, air-conditioners, and washing

machines. Nestle's chocolate bars are produced in Syracuse.

The cities of Schenectady, Albany, and Troy produce everything from boys' clothing to artificial heart valves.

Where Manufacturing Started

Along the Atlantic Coast is a huge manufacturing island. It covers the Atlantic Coast from Boston to Baltimore. It includes cities like Providence, Rhode Island; New York City; Newark, New Jersey; and Philadelphia, Pennsylvania. The cities are connected by hundreds of smaller cities. There is no open space between them.

This region has more of everything. It has more people, more factories, more cars, more cities. It has more action.

In this island of action, things are never still. Things are always being built, made, changed, torn down, and rebuilt. The sound of machinery never stops. Manufacturing here employs one out of every three workers.

Manufacturing began in these cities along the Atlantic. Ammunition plants were in Delaware. Sugar refineries were in Philadelphia. Textile mills were in New England.

There are still some textile mills in New England and Pennsylvania. But many have moved to southern states. They find cheaper labor there. When

textile companies moved out of a town, other industries often moved in. Some textile mills became factories producing plastics.

Near Philadelphia, we see huge oil storage tanks. Nearby are factories. They turn oil into gasoline.

Factories in the region produce stone, glass, and clay products. They provide building materials used to rebuild the centers of old cities.

The New York Stock Exchange, Wall Street, New York City. Here, people buy and sell stock, or *shares*, in big corporations. Stock in most of the largest corporations in the United States is sold here.



In Wilmington, Delaware, factories make medicines, nylon, and imitation leather for the entire country.

The Busiest Area: New York City

New York City is the busiest part of the busiest island. It is also the noisiest, richest, and most crowded. It is one of the largest cities in the world.

In the New York City area, factories make everything from airplanes to zippers. Nearly 18 million people live and work in the area.

It is easy to see why so many industries go there. There are many people, and they make a large market. Industries provide them with food, clothing, furniture, and entertainment.

The center of the clothing industry is in New York City. The country's men and women wear garments made in New York. Most of the clothing industry is located in one small part of the city. It is called the *garment district*. Many garment shops employ less than 100 people. They use just one floor of a tall building.

The shops take advantage of one another's special skills. One shop cuts material. Another sews pieces together. Still another adds buttonholes. The whole district is one big assembly line.

Buyers from department stores all over the country come to showrooms

in this district. They choose clothing for their stores.

Most of the books and magazines published in the United States are edited in New York.

The world's biggest money market is the New York Stock Exchange on Wall Street. Here business and industry borrow the savings of millions of people. These people live all over the world. Here, too, are the main offices of

the world's largest commercial banks. Other banks have branch offices in the financial district around Wall Street.

This part of the manufacturing region is a door between the United States and the rest of the world. This is where sea lanes and air lanes connect with inland waterways. They connect with railways, highways, and airways. This is the busiest crossroads on earth for people, ideas, and goods.

WHAT KEEPS INDUSTRY GOING?

Central Cities Serve Their Areas

Every manufacturing island has a central city. Let us study how central cities serve their islands. Look at the chart. Philadelphia, Pennsylvania, is a central city. Each 100-car train leaving the freight yards of Philadelphia drops off 69 of its cars in less than 100 miles. This means that most of the goods leaving Philadelphia are for the area served by Philadelphia.

The freight train leaves another 26 cars within 500 miles of Philadelphia. Only 5 cars will go to distant points.

As we go west in the manufacturing region, central cities are farther



apart. They serve larger surrounding areas. Milwaukee, Wisconsin, is a good example.

The area that Milwaukee serves is much larger than that of Philadelphia. The chart shows that 17 of the box cars travel less than 100 miles from Milwaukee. But 42 cars are bound for distant points. Many will travel all the way to the West Coast.

The central cities are bustling centers of activity. They are places where transportation routes meet. They are places where many people live and work. Here are the banks, the big hospitals, and television stations. Here are the theaters, special schools, and colleges.

The liveliest areas act like magnets. They attract money and businessmen.

What Attracts Industry?

Why did the Northeast become a manufacturing region? Because it had all the conditions necessary for factories to grow. What are these conditions?

Factories Must Have Raw Materials

Goods cannot be produced without raw materials. Factories using heavy materials should be built near the materials. It is costly to ship heavy materials over a long distance. That is why tile factories are built in Zanesville, Ohio. They use the good clay found along the nearby Ohio River.

Factories using raw materials that can spoil should be near the materials. Fruit grows well along the southern edge of the Great Lakes. Factories in nearby Michigan produce frozen fruit pies. Other factories in nearby Ohio produce jams and jellies.

Farms in Indiana raise corn-fed hogs. So meat-packers are in Indianapolis.

Truck farms in Maryland produce large crops of tomatoes. Some are canned. Some are made into catsup. It is all done in factories in nearby Baltimore.

Cheese-making factories locate near dairy farms. There are great corn crops in Indiana and Illinois. So most breakfast cereals are produced in nearby Battle Creek, Michigan.

Sometimes it isn't too important for a factory to be near raw material. This is true when the raw material can be shipped by water. Water transport is cheap. Even heavy raw materials can be shipped cheaply by water. For example, tons of iron ore are moved by water from Canadian and United States mines to steel mills in Lake Erie ports. Ocean ships bring iron ore from Africa and South America. They come to steel mills near Baltimore, Maryland. It is cheaper to bring iron ore from Africa by ship than to haul it from Minnesota across the Appalachian Mountains.

There is another kind of a factory that does not need to be near the raw

materials. When the raw material is not too valuable, but the product is valuable, a factory can be far away. For example, electronic parts are valuable and they are lightweight. But some of the raw materials—like wire and plastic—cost almost nothing. That is why manufacturers of electronic parts can be near Boston, Massachusetts. These parts can be shipped at little cost to all parts of the country.

Factories Must Have Power Factories must be near power sources. There must be coal or oil or waterpower to make electricity for the factories. The first factories in our country used waterpower. Fast-flowing New England streams turned early textile machines.

Later, turbines captured the power of waterfalls like Niagara. Turbines still make electricity. They power machines in Buffalo factories. Electric furnaces are used in steel mills.

Today, many industries locate along the Ohio River. Barges can easily bring coal to them from Appalachian mines. Coal is burned to make steam for power machinery.

Factories Must Be Near Markets Factories must be built where the goods can be shipped easily to the market. The owner of the factory must know who the buyers of his product are. He must know where they live.

Some factories sell to other factories. These factories are built close to one another. This is why Detroit is surrounded by factories. These factories produce parts for auto factories.

Some factories make farm machines. Much farm machinery is produced on the western edge of the manufacturing region. This part of the region is closest to the great farmlands of America.

Some factories produce goods for consumers. They want to be where many consumers live. So they are located in cities. For example, New York is a center of soft drink bottlers. They satisfy the thirst of millions of people living there.

Factories Must Have Workers Workers are needed to run factories. Factories now use more complicated machinery than they did. So workers must possess more skills. An industry cannot find a large group of skilled workers in a small town. So it must be near a city.

A large supply of highly skilled workers attracted many electronics plants to the Boston area.

Labor force and industry often grow together. Sometimes several industries are in one place. They produce similar products. The industries draw skilled men and women. This skilled labor force attracts more industry. The bigger the labor force, the more industry.



The more industry, the bigger the labor force. The two grow with one another.

Factories Should Have Pleasant Surroundings An area with a bad climate is not good for factories. Very hot or very cold weather can hurt machinery. Very wet weather can hurt factory buildings. Very dry weather may mean a shortage of water. Most industries need large amounts of water.

Workers do not like to live in areas without good schools and good recreation areas. These advantages attract workers and factory owners.

Entrepreneurs and Workers

The manufacturing region was built by businessmen with ideas. A businessman hopes to earn a profit. He hopes to do so by opening a store or an office to offer services. Or he may build a factory to produce goods. He isn't sure that he can sell his goods or services. He takes a chance.

The businessman who takes the risk is called the *entrepreneur* [ON-truh-pruh-NOOR].

In most cases, his own savings are not enough. He may have to borrow. Other people may decide to risk their savings to buy shares in his business. These people are called *shareholders*. They also share the risk. But the businessman is the entrepreneur.

The ideas of many entrepreneurs help to build the factories in the manufacturing region. The entrepreneurs bring jobs and income to the people of the region.

The Auto Builders No manufacturing industry has changed the way people live as much as the automobile industry.

Today, most Americans depend on the automobile. The motel business has grown. There are drive-in movies and drive-in cafes. There are even drive-in banks. Without automobiles there would be few suburbs. Shopping centers would not be built.

Who were some of the first automobile makers in our country? The first ones were what we might call tinkerers. They built automobiles as a hobby. The first successful gasoline-powered car in America was made by Charles and Frank Duryea. This was in 1894.

In 1908, Henry Leland came to Detroit from the East. He named his automobile the Cadillac. It was the first one to be made with uniform parts that could be interchanged.

Ransom E. Olds developed the Oldsmobile. Henry Ford developed the assembly line, using Olds's and Leland's ideas. Henry Ford's big idea was to produce cars so cheaply that many people could buy them.



Henry Ford, founder of the Ford Motor Company. The car is a 1922 Model T.

Ford's first mass-produced car was called the Model T. It came out in 1908. It was cheap, sturdy, and black. The price for the roadster model was \$850. Later he built a model which sold for less than \$400.

It was Ford's idea that higher wages meant more customers. He raised the wages of his workers from \$1.50 a day to \$5.00 a day. For 15 years, the Ford was the best-selling car. By 1921, Ford was producing over one and a half million cars a year.

William Durant founded the General Motors Corporation. He decided to build cars that would suit many tastes and incomes. He bought the factories of David Buick, Ransom E. Olds, Henry Leland, and Walter P. Chrysler. He bought factories producing the Pontiac and the Chevrolet.

In 1925, Walter P. Chrysler broke away from the General Motors Corporation. The Chrysler Corporation began to produce Chryslers, DeSotos, Plymouths, and Dodge cars.

The Big Three car producers were Ford Motor Company, the Chrysler Corporation, and General Motors Corporation.

Most of the cars now sold in the United States are produced by the Big Three. The Big Three compete with each other, but not to sell the cheapest cars. They compete to see who can produce a car whose design and color will appeal to the most people.

Workers and Unions Entrepreneurs did not develop industries alone. They needed the hard work of the workers. In the steel mills and factories during the 1890s, men worked 11 hours a day. They worked 7 days a week. They earned from \$9 to \$14 a week. The work was dangerous. There were many accidents in the mills. Workers had no insurance. The work was not steady. Many men worked only part of the year.

The unskilled workers lived in dirty, crowded tenements. The company rented houses to steel workers. But the rent was \$11 a week.

This was the worker's life in dirty, ugly Pittsburgh, Pennsylvania.

Workers poured in by the thousands from Europe. Many people looked for

jobs. Those who were willing to work for the lowest wages got the jobs. It was against the law for men to organize or demand better wages. There were times when the conditions were so bad that workers went on strike. They were not often successful. In 1892, in Homestead, Pennsylvania, there was a strike. The workers fought a bloody two-day battle with company guards who finally broke the strike. Many people were killed or injured in the fighting. The workers did not get the wage increases. But the nation was shocked by the strike. It was shocked at the working conditions.

Still, it was not until 1935 that Congress passed a law giving workers the right to organize. The Wagner Act permitted workers to organize for better wages and working conditions.

No one worked harder for workers' rights than Samuel Gompers. He was a young, English-born cigar maker. At twenty-four, he became president of the New York Cigar Makers. Later, he helped found the American Federation of Labor. It is called the AF of L for short. This union was only for skilled craft workers. Not all workers could join it. Gompers was leader of the AF of L for years.

John L. Lewis helped found the Congress of Industrial Organizations. Often it is called the CIO. This was a union of all workers in an industry. It

included skilled and unskilled workers.

For years, the CIO and the AF of L competed. Each tried to take members away from the other. Each claimed that it spoke for the workers.

Finally in 1952, Walter Reuther became president of the CIO. He and others tried to bring the two great labor unions together. He knew that if the two were united, workers would have more power. In 1955, the two did unite. They became the AFL-CIO.

Through these men and others, labor's condition improved. Workers got pension programs. They got health insurance. They got holidays and an eight-hour workday. The unions helped them get raises in salary.

Support Systems

Remember the river systems discussed in Chapter Three? Think of the manufacturing region as a large system also. A system is made up of many parts. The parts act on one another. The parts of the manufacturing region act on each other too. Together they act as a system.

Detroit is the center of the auto industry. But not all parts of the auto are produced there. They are produced by hundreds of companies that are scattered all over the manufacturing region.

These parts are brought to Detroit by trains, planes, trucks, and boats that travel day and night. When all these

Detroit: Buyer and Seller



parts reach Detroit, they are put together to form automobiles.

The Detroit assembly plants and the hundreds of small companies depend on each other. If any plant closes down, or even slows down, the incomes of millions of workers are affected.

Factories depend on each other. An automobile factory buys machinery from the machine-tool industry. It also buys parts for its cars from hundreds of smaller factories. If these parts do not get to the automobile factory at the right time, the assembly line will be stopped. If factories could not depend on each other, the whole manu-

facturing system would break down.

Other systems are needed to help or support the manufacturing system.

There are six important support systems.

A Transportation Support System

Factories must have a way to bring in their workers. Raw materials must come in. Products must go out.

The manufacturing region is criss-crossed with systems of transportation. There are good highways, waterways, railroads, and air lanes in the manufacturing region. Factories have a steady flow of workers and materials.

Factories line the banks of many major rivers in the manufacturing region. The giant Du Pont plant on the Delaware River at Wilmington, Delaware, began as a small mill. This small mill grew to be the world's biggest chemical company. Barges and ships bring in the raw materials. They take out finished products.

Two of America's oldest and most heavily traveled waterways serve as borders of the manufacturing region. They are the Ohio and Mississippi Rivers. Factories there depend on river barges to bring in raw materials.

The St. Lawrence Seaway is an example of how a natural waterway was improved. Canada and the United States built it together. It was finished in 1959. Now, ocean-going ships can travel from the Atlantic Ocean, up the St. Lawrence River into the Great Lakes. This is more than 2,300 miles inland from the Atlantic.

Ice closes the Seaway from mid-December to April. But the Port of New York is never frozen over. New York continues to be the biggest and busiest port in the manufacturing region.

Railroads first crossed the Appalachian Mountains in the 1850s. Soon Chicago became a great rail center. Today, railroads come into Chicago from all directions. Every day some 950 freight trains enter, leave, and operate within the Chicago area.



Industry depends on transportation. This view from Newark Airport shows every kind of modern transportation.

Systems that Support Manufacturing



Railroads link big cities all over the country. One-fourth of the country's miles of railway are in the manufacturing region.

Trucks are carrying more and more goods. They now compete with railroads. Trucks do a better job of carrying goods over short distances. They can go more places. But it is still cheaper to send goods by train if they are going a long way. So, the rail and truck companies had a good idea. Why not carry loaded truck trailers on a train for the long trips? At the end of the line, the trailer rolls off the train. Then it goes to places the train no longer reaches. This is called *piggy-back* riding. This was a good idea and it worked. Trucks ride piggy-back now on most freight trains.

Airlines today carry more people than railroads do. Good airports are in all the cities of the manufacturing region. Two of the world's largest and busiest airports are in the region. They are Kennedy International Airport at New York and O'Hare International Airport at Chicago. Millions of passengers go through these airports each year. Almost a billion pounds of freight pass through O'Hare in some years.

Because of fast air transportation, businesses do not have to store large supplies of goods. Goods can be brought in whenever they are needed.

Businesses do not need to rent or buy large warehouses. The money saved can be used for other purposes.

A Power Support System Today, power means electricity. Electricity lights factories and runs machines. Years ago when manufacturing was beginning along the East Coast, moving water powered textile looms. Water wheels took energy from the rivers flowing to the Atlantic. The first factories were built along these rivers.

When electricity was harnessed, factories no longer had to be near rivers. They could locate wherever electric lines could go. Today electric motors run machines.

Where does electricity come from? Electricity is produced from turbines. Sometimes, water powers the turbines that make electricity. For example, Niagara Falls produces much electric power. The great force of the falling water turns turbines. With all this electric power nearby, Buffalo, New York, became a big manufacturing city.

But electricity made from water-power cannot meet the needs of all the factories in the region. Industry needs another source of power.

Much of it comes from coal. Coal is burned to make steam. Steam turns the turbines that produce electricity. Businessmen use savings to build steam

plants. They earn profits by selling electricity to many users. It is usually not profitable for one factory to build its own steam plant.

Most steam plants are very big. They serve many customers. They serve homes, offices, and stores as well as factories.

Scientists are always looking for new and better ways to do things. They are now using the atom to make electricity. Businessmen have built some plants to produce steam from the heat caused by splitting atoms. They hope that soon very cheap electricity can be produced from the atom.

A Water Support System Factories must locate where there is a good water supply. They draw water from a river or a lake. They use it, then they pump it back. Many steel mills are along the Mahoning [mah-HOE-ning] River near Youngstown, Ohio. The water cools their huge furnaces. But cooling the furnaces heats up the water. So, when steel mills pump warm water back into the river, the temperature of the river can rise 10 degrees. This can do harm to fish in the river.

A Waste Disposal Support System Many factories pump their wastes directly into city sewers. Others operate their own waste-disposal system.

Few clear rivers are left in the manufacturing region today. Cities and factories have polluted their rivers with their wastes. Clean water is scarce.

Industries that use water must now plan carefully before they decide to build or expand in the manufacturing region.

A Communications Support System

Communications link all parts of the manufacturing region. Telephones connect all parts of a factory. They carry messages from the factory all over the world. Information flows between factories through the postal system. Information flows to factories through radio and television. Teletype messages travel along telephone lines. Businessmen all over the manufacturing region stay in close touch with New York City, where many of the head offices are located.

Telephone and power lines, suspended high overhead, are common sights throughout the manufacturing region. A great network of oil and gas pipelines is underground. Refineries bring in their raw materials with this important support system.

An Educational Support System

Workers with an education can acquire skills easily. Skilled, intelligent workers can produce better than uneducated workers.

In the manufacturing region, educational systems are well developed. They go from kindergarten to the university. Hundreds of specialized trade schools are located here.

The large number of trained people in the manufacturing region attracts and holds industry.

Steel: The Backbone of Industry

Steel is the stuff of which an industrial society is built. An industrial society needs tools. Tools of all sizes are made of steel.

An industrial society needs power to run the tools. Generators that produce electricity are made of steel. Steel is in the wells and pipelines that bring gas and oil to industries. The furnaces in which coal is burned are made of steel. Millions of motors are made of steel.

Factories and office buildings are built around steel frames. Tall buildings use steel elevators. The mines that produce raw materials also use steel drills, power shovels, and cranes. Steel trucks drive on steel-reinforced highways. Steel trains run on steel tracks. Bridges are made of steel.

A huge ladle pours *ingots* of yellow-hot steel. An ingot is a block or loaf of metal. It can be remelted to make other objects.



A house is full of steel. Washing machines, toasters, refrigerators, and stoves are all made of steel. Beds have steel springs. Bathtubs, kitchen sinks, and plumbing fixtures are of steel. Steel tractors are used on farms.

Houses are held together with steel nails. The heating and cooling systems in houses are made of steel. Experts say there are about three tons of steel in the average American home. There are 2,600 pounds of steel in the family car.

On a map of our country, let's trace a line from Detroit, Michigan, straight

to Buffalo, New York. Now, trace another line from Buffalo, New York, to Pittsburgh, Pennsylvania. Then, trace a third line from Pittsburgh, back to Detroit. Within this triangle, nearly half of all our nation's steel is produced. If we draw a circle 25 miles in all directions around Gary, Indiana, we can account for another 20 pounds out of every 100 of our nation's steel. And, if we draw a circle around Baltimore, Maryland, we can account for still another 20 pounds out of every 100 of our nation's steel.

A blast furnace making steel. Furnaces like this burn a special kind of coal called *coke*. Coke burns much hotter than ordinary coal.



In the manufacturing region, Pittsburgh was one of the best places to build steel mills. All the raw materials were there, or could easily be brought in.

A big market was growing for steel. In the 1850s, an Englishman, Sir Henry Bessemer, learned to make good steel by blowing cold air through hot melted iron. In America, the demand for steel was growing. Locomotives and rails were needed to connect the distant parts of the United States. The Great Plains were beginning to be settled. The tough sod needed steel plows to turn it. Everything was ready for the entrepreneur to build the steel mills.

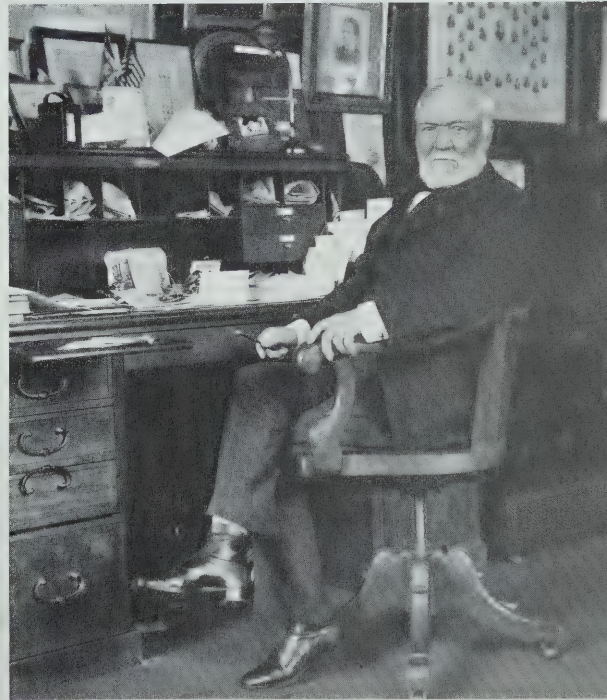
Andrew Carnegie The entrepreneur was Andrew Carnegie. He was born in Scotland in 1835. His father was a hand weaver who lost his job to a weaving machine. The family came to the United States. They settled in a Scottish community near Pittsburgh. The young boy got a job in a cotton mill where he was paid \$1.25 a week. Because his handwriting was good, he was asked to keep the books for the cotton mills.

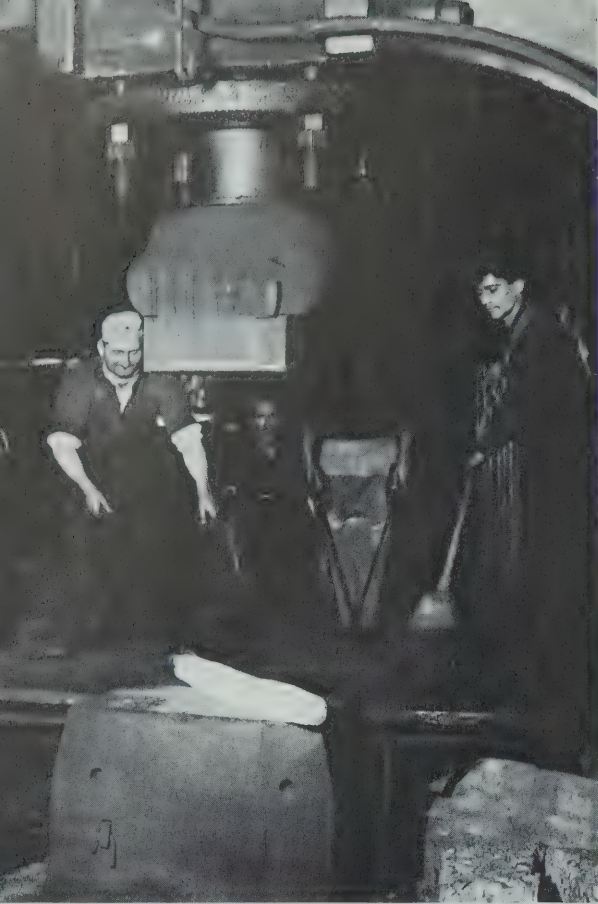
During the winter he walked to Pittsburgh every week to learn bookkeeping. He got a new job as a telegraph messenger. While he was messenger, he learned the telegraph code. People around him discovered his ability. They

made him a Western Union operator. He was a good worker. He delivered messages promptly. He could be trusted. The superintendent of the Pennsylvania Railroad Company liked him. So, the young man got a job as a telegraph operator with the Pennsylvania Railroad.

One day there was a railroad accident. The superintendent was not in his office. Young Carnegie took all the messages. He understood that it was important for decisions to be made. So

Andrew Carnegie, son of a poor immigrant, made a fortune in the steel business. He gave much of his money to charity.





Workmen in a steel mill around 1900. Hot steel is fairly soft. By skillful use of the big press, workers could shape hot steel bars into many different forms.

he made them, although the superintendent was not there. He might have been fired. Instead he was promoted.

Young Carnegie went into the iron business. He saw the possibilities for iron in building bridges, locomotives, and rails. He became a part owner of iron mills.

Finally he decided to put all his eggs in one basket. He would make steel. He

built his steel mill along the *Monongahela* [moh-NONG-guh-HEEL-uh] River. It was 12 miles from Pittsburgh. The steel mill was at a place where the river barges and two railroads could compete for business. That meant lower transportation costs for Carnegie's steel mill.

Carnegie was worried about the great risks in the steel business. It took huge amounts of savings to build a steel plant. The steel business goes up and down with the well-being of the country. If the railroads and other businesses do well, lots of steel is ordered for railroads and factories. But, if business is not good, the steel mills may have to shut down. At that time, nobody knew what to do about the ups and downs of business. Carnegie thought he could make the risks smaller by buying up the steel mills of his competitors. He also thought it would be wise to buy his own iron mines. He bought railroads, lake barges, and coal mines. And so, in 1899, he founded the Carnegie Steel Company. The company earned great profits. In 1900, it earned \$40 million.

Andrew Carnegie was the kind of person who worked hard at whatever he did. He thought working hard just to make money was silly. He wanted to improve people's minds and health. He wanted to use his fortune to build a better world. He supported public li-

braries all over the United States. He supported world peace. He supported the arts and education.

One evening in 1900, he met J. P. Morgan, a New York banker. During dinner, J. P. Morgan asked Carnegie how much he wanted for the Carnegie Steel Company. Carnegie said \$492 million. J. P. Morgan said that was just fine and bought the company from Carnegie.

J. P. Morgan with Judge Elbert Gary established the biggest steel corporation in the world. Today it is called the United States Steel Corporation.

Manufacturing: A Mixed Blessing

The benefits of manufacturing have been many. It has given more people more jobs. It has given more people higher wages. But there have been drawbacks. Here are some of them:

Crowded Cities and Slums As factories increased in number, they were built closer and closer together. Lots of workers were needed for factories. They came in from farm areas and from Europe. They settled down in neighborhoods near the factories. Their wages were low, so they had to live in cheaply made houses. In a short while, these neighborhoods became slums.

Pollution Factory chimneys let out smoke and waste. They pollute air and water. Truck exhaust pollutes the air and water. Noise deafens people. It upsets their nerves.

Insecure Jobs As big machines are invented, they replace unskilled workers. These workers then are unemployed. They cannot get jobs because their labor is no longer needed.

Depressions Every so often, large groups of people are thrown out of work. We call these periods depressions. Depressions happen when factory owners cannot sell their goods for the price they want. Consumers refuse to pay a high price. They decide to postpone buying until a time when prices might come down.

But when everyone postpones buying, times never get better. They get worse. Because the manufacturing region produces so many goods, people who work in the region suffer.

The worst depression the United States ever had began in 1929. Fourteen million people were out of work. Most of them were in the manufacturing region.

Since there were no jobs in factories, the government created jobs. The federal government hired people to build



Industry produces many valuable goods. But it often harms the environment. Factories like this one pollute the air. Others pollute the water. Industrial products like cars also cause pollution.

roads and dams. Others planted forests. The government also hired artists and writers to paint pictures and write books. The pay was low but people were glad just to have jobs.

By 1938, the depression was just about over. But many people who went

through it will remember the hardship for the rest of their lives.

The people of the country are aware of the costs of a depression. The government studied the causes of depressions and is now trying to prevent them from developing.

THE FUTURE OF THE REGION

The manufacturing region is called a “mature” region. That is, it is fully developed. It still produces a lot. But the

Gulf Coast and California areas are growing fast. The manufacturing region is still the center of manufacturing.

But its share of all the manufacturing in the United States is going down. In the past 100 years, the number of manufacturing workers in the region has dropped from eight out of ten to six out of ten.

Why does manufacturing grow more slowly in the manufacturing region? The population is shifting to the South and to the West. In 1900, the South and West were thinly populated. These regions did not need much industry. Most of the manufactured goods were shipped to them from the manufacturing region. Then more and more people moved to these regions. The people needed more and more manufactured goods. Soon it became very expensive to transport all the manufactured goods these regions needed.

Industries in the manufacturing region began building factories, such as textile mills, in the South. They built factories in the West to serve western markets. And skilled people moved to the West. They helped new industries to grow in the West.

Will the manufacturing region be left behind? Will another area become the major United States manufacturing center? Probably not.

First, the manufacturing region has a head start on other regions. It has many of the elements needed for

success. It has many intelligent workers and many raw materials. It has good transportation and schools. It has many entrepreneurs with courage and savings. Above all, it has a dependable system of smaller companies throughout the region. They supply the machine tools and the thousands of goods and services needed by factories that produce finished goods. So long as this is the case, the manufacturing region will be the industrial leader of the United States.

Test Yourself

1. Why do more people live in a manufacturing region than in any other kind of region?
2. What is the difference between manufacturing and processing?
3. What is an entrepreneur? Where does he usually get his money?
4. Name some of the benefits labor unions have gotten for their workers.
5. What is meant by a support system? What are some of the most important support systems for the manufacturing system?

I GO TO WORK WITH DAD

My name is Billy Novak. I live in Cleveland, Ohio, near Lake Erie.

Do you know much about Cleveland? It's an important city. There are lots of railroads and big industries here. People make things like iron and steel. They do a lot of printing and meat packing in Cleveland. My dad says that there are bronze and tin factories here, too.

Dad works in one of the big factories. He works for the White Motor Company. The White company makes a lot of the big diesel trucks you see on the highways.

I like trucks and cars. Dad let me go to work with him during my Christmas vacation. Dad was glad that I was interested in his job. He got a special pass to take me to the factory for half a day.

That morning, I got up early and hurried through my paper route. I like to make my own money for Christmas presents and things like that. Then Dad and I drove to the factory. On the way, he told me why Cleveland is such a good place to make trucks. He said it's because it is easy to get iron and steel and glass and wire in Cleveland. And you need all of those things to make a truck.

Dad says that Cleveland is a big market for trucks. Plenty of businesses there need trucks. So people will buy the trucks the White Motor Company makes. Cleveland also has plenty of water nearby in Lake Erie. Almost all factories need water. I guess Dad is right. Cleveland is a good place for industry.



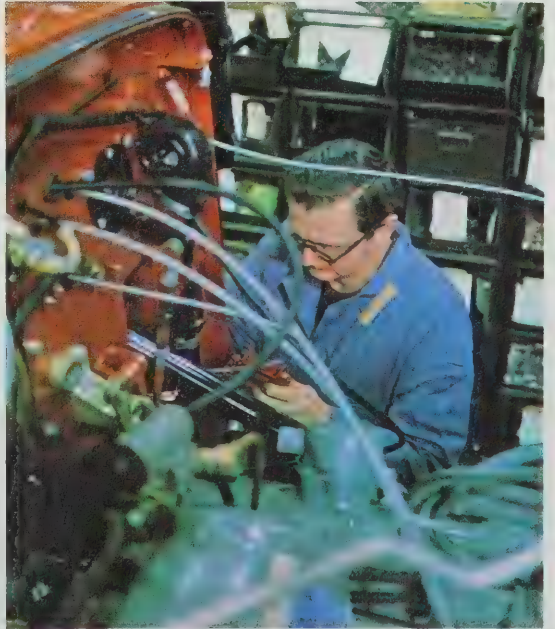


At the factory, Dad lined up with the other men. Each worker puts a card into a machine. It marks the exact time he comes to work. This is called *punching a time clock*.

After that, I finally got to see how they make the big trucks. The trucks come down an *assembly line*. Each man uses his special skill to work on a different part of the truck. You wouldn't believe how fast the assembly line turns out trucks!

Dad's job is to inspect the trucks. He checks to make sure that all of the parts are put together right. It's an important job. I was really proud of him.

I wanted to stay and watch all day. But Mom and my sister Jenny picked me up at noon. We took a bus to the shopping center downtown. I talked so much about the factory that they started laughing.



Downtown, Mom bought all kinds of good food for Christmas Day. Then Jenny and I went together to pick out presents for Mom and Dad. Jenny makes her own money, too. She baby-sits for some of the people in our neighborhood.





Dad met us after work and we all went to buy a Christmas tree. That night we drove around and looked at the Christmas lights downtown. Then we went home and decorated the tree. Finally we put our presents under it. What a great day!





Chapter 5

The South Central Region

The rich ranchers were hoarse from cheering. They had been to a football game at the Astrodome in Houston, Texas.

After the game, the ranchers left for the airport. There in the sun were many small private airplanes. Within minutes, the planes had taken off. The ranchers were on their way back to their homes in Dallas, Austin, or San Antonio. If the planes had gone high enough, the men could have seen the entire region. It covers parts of Louisiana, Texas, Arkansas, Oklahoma, New Mexico and Arizona.

The eastern part of the region looks green. The rainfall is plentiful, and the climate is warm.

As you travel west, the land gets drier and higher. At the far western edge of the region, the bright sun burns the deserts golden brown.

In southern Arizona, deep wells have helped water the desert land. This part of the region is an oasis of cotton fields, fruit orchards, and vegetable crops.

Many years ago this whole region seemed useless. But man had seen the potential of the region. For years man worked to develop the land. Today the struggle is paying off. Man's work is building a region of riches.

THE PEOPLE OF THE REGION

A region is more than land. It is also people. Many different groups of people live in the region. Who are they? How did they get there?

Spanish-Speaking Settlers

The Spanish were the first European explorers. They came in the 1500s looking for treasure. Most of them returned to Spain, but some stayed. Other Spanish settlers joined them, and by the 1600s they were scattered throughout the South Central Region. They saw that the region was much like Spain. It had areas of little rainfall. There was much sunlight.

The Spaniards knew it would be a good ranching region. They knew how to irrigate farms. They were the first to bring sheep to the region. They were the first cowboys in the region. They also planted fruit and nut trees along the Rio Grande in New Mexico.

The Spanish-Americans live in this area. It has been their home for many years. They have kept many of the old ways of life.

Over the years, Spanish-speaking people have come north from Mexico. The Mexican-Americans live mainly in Texas. Almost half the people of San Antonio are Mexican-Americans.

The Spanish and Mexican peoples have added to the culture of the region and the entire country. They gave us the Spanish style of house. They also added words to our language like *rodeo*, *lasso*, *lariat*, *corral*, and *sombrero*. But, most important, they taught later settlers how to farm and ranch in a dry region.

Today many of the young Mexican-Americans and Spanish-Americans face similar problems. Many of their farms are too small to feed a family. So they are forced to move to cities where they seek work.

Indians

When the Spanish explorers first came to the South Central area, Indians were the only people who lived there. Indians had lived there for hundreds of years. However, most of the tribes of Indians who live in the South Central Region today came to the area later.

The largest number of Indians in this region belong to the "Five Civilized Tribes." They include the Chickasaws, the Creeks, the Seminoles, Choctaws, and Cherokees.

They came from Georgia and Tennessee. There, they lived in villages in log houses. They understood the im-



There are many kinds of land in the South Central Region. Deserts and rocky mesas cover much of Arizona. There are wide, dry plains in west Texas. In Louisiana, the land is flat, green, and fertile.

portance of education and communication. A Cherokee chief named Sequoia invented a way to write the Indian language. Before that, the tribes had only a spoken language.

These tribes had a code of laws and a kind of supreme court. They were very curious and intelligent people. They welcomed new ideas.

Then white settlers came in and wanted the land. They chased the Indians out of Georgia and Tennessee. The Indians had to move west across the Mississippi. So they entered the South Central Region.

Those who came first, were given free transportation. They also received money for their land and houses in Tennessee and Georgia. When these Indians reached the Indian Territory, which is now Oklahoma, they became big landowners.

They settled in the rich bottom land near the rivers. They became farmers. They married with the white settlers and before long were rich men and leaders of society. Over the years, they lost some of their Indian habits.

Those who left their old homes last, waited too long. They were pushed out



roughly by white settlers. They did not get any money for their lands.

Their long trip west was slow and painful. Four thousand Indians died on this long march west. It was called the “Trail of Tears.”

These Indians settled in the north-eastern part of what is now Oklahoma. They are the poorest people in the region. They may be the poorest in the country. They have not had very much to do with the white people around them over the years. They did not usually marry whites. So they have kept most of their Indian habits and ways of doing things.

Some Indians were very lucky. They struck oil. This added to the wealth of both the Indians and the region.

Not long ago, the United States government realized it had not paid the Indians a fair amount when it took over Indian lands about a hundred years ago. So it made awards to these Indians of Oklahoma.

Still, most of the Indians there live in poverty.

Blacks

Blacks have been in the South Central region since the 1500s. Estevanico, a black man from Morocco, was ship-

wrecked on the Texas coast about 1530. He made his way across Texas and New Mexico. He told Spanish officials that on his journey he had heard Indians talk about cities full of gold. They were called, he said, the Seven Cities of Cibola. His report got back to Spain. The great explorer Coronado set off to find them. But they were never found.

Estevanico continued his explorations through the region. He discovered the Pueblo Indian villages in New Mexico. In 1539 he was killed by Indians.

As the years passed, other blacks came to the region. In the early 1800s, Texas belonged to Mexico. Mexico did not allow slavery in Texas. Many blacks fled from the South to Texas. Some even joined friendly Indian tribes.

Hendricks Arnold was one of the first free blacks in Texas. He helped capture the city of San Antonio from Mexico. The blacks of Texas were good horsemen and good soldiers. On the Texas frontier, a man was judged by how well he rode a horse, and not by his color.

The French

In 1960, the population of Louisiana was 3.3 million. Half a million speak French. Their families came into Louisiana in the 1700s. Some came from France. Others were driven from their homes in Canada by the English. These French-speaking people from Canada were called *Acadians* [uh-KAY-dee-enz]. Acadia was the name of their part of Canada.

The Spanish explorer Coronado had heard of golden cities. In 1540, he set off to find them. He and his large group of soldiers headed north and east from Old Mexico. They traveled through New Mexico all the way to what is now Kansas. But they never found gold.





Louisiana once belonged to France. Many people of French descent still live there. The old streets of New Orleans have French names. Chartres Street (center) is named for a city in France. The iron grillwork (left) on many New Orleans buildings was made by French craftsmen long ago. In the little town of St. Martinsville (right), the telephone company sign is in French.

Many Acadians settled in the swamps and bayous [BY-yoze] of the state. There were few roads in that area. So they laid their farms out along waterways. They traveled about easily by boat.

Today, there are few jobs that are not filled by Acadians. They are fishermen, judges, doctors, farmers, and

accountants, for example. They take an important part in politics.

The Creoles

The United States bought the Louisiana Territory from France in 1803. Then American settlers moved into New Orleans. There they found the *Creole* [KREE-OLE] people. They were

a proud people. They were the leaders in the business and social life of the city. The Creoles were part French or part Spanish. Their families had been among the first settlers in the area.

Creoles still live in Louisiana. The French, Creole, and Acadian settlers left their imprints on Louisiana. French and Acadian dialects are still spoken. The French system of laws is still used in Louisiana. It is different from the laws of all the other states. The laws of the other states are based on the English system of law. For example, for many years a woman could not inherit property under French law. It went to her husband automatically.

The Ozark Mountain People

In the western part of Arkansas and in eastern Oklahoma lie the beautiful *Ozark* [OH-ZARK] and *Ouachita* [WOSH-uh-TAW] *Mountains*. The people here are descendants of the early English colonists. These colonists left the Appalachian Region and went west. They settled in these mountains to trap, fish, and live on small mountain farms.

Few strangers passed through their countryside. So the people did not mix with others. They kept their old customs and ways of speaking. People in other areas call these mountain people, "hillbillies."

These mountain people do not like to live in groups. They don't like city folks and city ways very much. Not much change has come to the people of the region. But even here some young people leave to find work in cities.

English-Speaking Settlers and Other Immigrants

Texas became a state in 1845. Slavery was then allowed in the state of Texas. At the same time, the cotton lands in the old South were wearing out. Some southern families moved to Texas. They brought their slaves with them. They settled along the coastal plain and started great cotton plantations.

Immigrants from Europe heard about Texas. They arrived by ship on the East Coast. Then they went the rest of the way by train.

One group of immigrants were German people. They settled in the rough, rocky hill country of central Texas. These German people became very good farmers.

The German settlers started clubs in their little towns. They studied books and music. Each town had its small musical group. Even today, there are signs of their love of music. Many of those German towns still have a bandstand in the center of the town. Even towns that were not German borrowed the idea of bandstands.

RESOURCES THAT MADE THE REGION RICH

The land is different. The people are different. Is there one sameness that this great area shares? Is there something true for the whole area that makes it a region? Yes, there is. The area has great wealth. It comes from its natural resources.

Oil

One day in 1931, a 70-year-old man called Dad Joiner was out in his field as usual. For days he had been drilling for oil near the little town of Henderson in east Texas. People were beginning to make fun of him. He had dug 18 holes deep into the ground. Each time he hit nothing. The holes were quite dry. But this day was different.

Suddenly, Dad Joiner and those around heard a rumbling noise. Then out of the 19th hole there burst a stream of black oil. It rose hissing for 120 feet into the air. Dad Joiner had brought in a gusher.

In fact, he had drilled into one of the richest pools of oil ever discovered. Ever since 1900, east Texas and Oklahoma had been great producers of oil. But never had anyone discovered anything like this.

Although he didn't know it at the time, Dad Joiner had discovered an underground pool of oil that was 43 miles long. It was 5 miles wide. This pool made Texas the greatest producer of oil in the world. It also made it one of the richest states.

Today, oil is produced in much of the region. Oil wells have even been drilled in the Gulf of Mexico. The need for oil is tremendous.

Until 1900, oil was used mostly for lighting. It was also used for greasing machinery. But when the automobile was invented, the demand for oil shot up. Gasoline is made from oil.

Then airplanes were invented. Airplanes use lots of oil and gasoline. The demand for oil rose higher. Farm machinery uses gasoline and oil. Ships and trains use them.

Oil is used to generate electricity. Industries use it for power. From the oil industry the great *petrochemical* [PET-roe-KEM-i-kal] industry has grown. The word *petrochemical* means a mixture of petroleum and chemicals. This industry makes chemicals from oil. It supplies the world with synthetic rubber, plastics, and fertilizers. It makes

Industries Make Many Products from Oil



drugs, paints, synthetic fibers, and many other products.

All of this helped make many people in the region very rich.

The oil is carried by pipelines from the oil fields to the refineries. There are many refineries in Tulsa, Oklahoma. Many also line the shores of the Gulf of Mexico. From the refineries, oil products are sent to the gulf ports. There they are put into tankers that carry them to distant places.

Congress said it is not wise to depend on foreign oil. Other countries might suddenly decide not to sell their oil. Then we would be in trouble. So the United States government decided

to help companies to search for more oil. The government decided to reduce taxes for oil companies. This tax saving encourages the companies to look for new oil fields.

The government also decided to let only a small amount of foreign oil come into this country. This decision helped the United States companies by getting rid of foreign competition.

Natural Gas

Some gas comes from oil wells. Some gas comes from natural-gas pools. The reserves of natural gas in the South Central Region are the biggest in the United States.

In the early days, oil companies let the gas burn away. They didn't know how to get it to the markets. Then gas began to take the place of coal in heating factories and homes. The companies built pipelines to get the gas to market. Since 1925, the gas industry has grown greatly. A pipeline system has been built from the South Central gas fields to the rest of the country.

Copper

The copper mines in the desert of southern Arizona have been the greatest producers of copper in the United States. Arizona produces one out of every three tons of copper in the United States. It produces one out of every ten tons produced in the world.

Bauxite and Magnesium

Bauxite [BAWK-site] is the ore from which we get aluminum. Most of the bauxite in this country is in this region, in Arkansas. Like copper, bauxite can be processed within the region. The bauxite can be used in the aluminum factories along the Texas coast.

Magnesium is a metal produced in plants near Houston, Texas. Since magnesium is produced from seawater, the plants are in a good spot. The sea is nearby. So are lime, salt, and sulfur, which are used to make magnesium.

Salt

Miles of salt domes are located along the Gulf Coast. They run from the Rio Grande to the Mississippi. A salt dome is salt that has been pushed up above the surface of the land.

The Indians of Louisiana got their salt from a spot along the coast called Five Islands. People have mined salt there ever since.

The salt mine is at the top of the salt dome. The top of the mine may be 600 feet or more underground. A tunnel is driven down into the salt. There are huge rooms dug out. Sometimes they are 100 feet high. Pillars of salt hold up the ceiling.

The Gulf Coast salt supply will last for a long time.

Sulfur

Sulfur is also found in the salt domes along the Gulf Coast. These sulfur deposits are the largest known in the world. They stretch under the floor of the Gulf of Mexico. About two-thirds of all sulfur comes from this area.

Sulfur is used to make rubber and insect poisons. It is also used in making paper, fertilizer, and paints.

Sulfur can also be produced from natural gas. It is produced this way near Odessa in west Texas.

Cattle, Sheep, and Goats

Cattle ranchers must be careful of the grass on their land. It takes nearly 100 acres of range land just to feed one steer. Today, it takes more land than most ranchers have to feed a large herd.

Cattle ranchers use more machinery now. Some ranches have two-way radios for their cowboys. Some use helicopters to keep watch on their herds.

Texas raises more cattle than any other state. But the state earns less income from cattle than Iowa or Illinois. Farmers in the northern states feed the cattle corn. Corn fattens them for the market. This permits the farmers in the North to earn more for the fattened cattle than do the Texas ranchers who raise only the cattle and ship them north for feeding.

But cattle raising is popular in the South Central Region. More farmers of Louisiana are beginning to raise cattle.

Cotton farmers on the Texas prairies are now changing to ranching. Ranching does not require as many workers as cotton farming, and workers are hard to find.

Many cotton farmers in eastern Texas are also shifting to cattle ranching. Nearby cities offer a growing market for meat.

One-fourth of all sheep in the United States are raised here. Sheep are raised for meat and for wool. Sheep ranchers, however, earn more from meat than from wool.

Texas wool is marketed in the city of San Angelo. Boston and New York wool firms have branch offices in San Angelo. These branch offices buy wool for the textile mills of the world.

Wool growers must compete with those of Australia and New Zealand. So the United States government helps them out by taxing wool that comes from foreign countries.

Wool now competes with synthetic fibers. Many Americans prefer synthetics like nylon.

Sheep raisers are fighting synthetic fibers. They set up the American Sheep Producers Council. This council advertises wool in newspapers and magazines. It teaches housewives how to cook lamb and mutton. It tells them how to knit with wool. Wool growers also have a Miss Wool of America pageant each year in San Angelo. This helps to make the uses of wool better known.

Almost all the mohair produced in the United States is raised in west Texas. Mohair comes from a goat. The mohair is shipped mainly to New England mills.



A shrimp trawler cruises the Gulf of Mexico. Shrimping is the most important commercial fishing done in the South Central Region.

Fisheries

Louisiana is a leader in commercial fishing. The fish are processed in Louisiana. The state also produces more canned and frozen shrimp than any other. They are sold all over the country. Louisiana sells several million dollars worth of oysters each year.

In years past, people caught catfish from a riverbank with a line and a pole. Now, however, Louisiana has a new fish industry. It is catfish farming. The state may become the greatest producer of catfish in the country.

Other Products

Rice is grown in Louisiana and on the Texas coastal plain. In Arkansas, it grows along swampy river valleys. It is an important crop for all three states. Rice can be produced now at a low

cost. It used to be planted by hand. But today, it is planted and fertilized by airplanes. It can be done cheaper and faster this way.

In some years, rice fields must lie fallow. In some parts of Louisiana and Arkansas, these fallow fields are flooded and stocked with catfish and minnows. Farmers earn income from a catfish crop in this way. In Texas, the fallow fields are used as grazing ground for beef cattle. In these ways the land is used in the best way possible from year to year.

Sugar cane grows in the black soil of Louisiana and along the Texas Gulf Coast. Louisiana produces more sugarcane than any other state except Hawaii.

In Louisiana, small farmers used to produce sugarcane. But now most is being produced by big companies or

plantations. Only these large organizations can compete with the United States sugar-beet growers and foreign sugar.

Besides its use as food, sugar is also used to make industrial alcohol. The stalks of the cane are used for cattle feed. The stalks are also used to make building materials.

In the cold gray winter months where do you think we get our fresh fruits and vegetables? Many of them come from this region. Truck farming is a growing business. Years ago only a few families could afford to buy fresh fruits and vegetables in winter. Everyone else ate canned goods. Now many families in the country have higher incomes. Many can now buy fresh and frozen fruits and vegetables throughout the year. Texas, like California, is a big supplier of fruits and vegetables. Louisiana and Arizona are also.

Near the Rio Grande is an area called the "Winter Garden of Texas." The climate here is sunny and warm. There are orange, lemon, and grapefruit orchards. The orchards grow up to four crops a year.

Forests and Lumbering

The lumber industry in the region is a profitable business. The lumber companies use good forestry methods. Also, rain causes forests to grow faster here

than they do in the north. Pines in Texas and Louisiana grow to be 100 feet tall.

The trees are used for plywood, big beams, and paper pulp. More than half the pulp used in the United States is grown here. More than one-third of the paper used in the nation is produced in the South and the South Central Region.

Cotton

The western part of the region used to be mainly ranching land. During World War I, the price of cotton rose. So people began planting cotton instead. They planted it even in the dry land of west Texas.

The western land was flat, and farmers could use machinery on it. Machines could plow and harvest the cotton.

In past years, a farmer in a state like Arkansas worked a small cotton patch. He used a mule, and he hoed weeds by hand. He picked cotton by hand. It took him about 150 hours to produce just one bale of cotton. Now, with new machinery, a farmer can produce a bale of cotton in just 15 hours.

In the 1930s, there was a great depression in the United States. Factories and businesses closed down. Many people lost their jobs and income. Since people had little money, they bought little cotton. The price of cotton fell. Many cotton farmers lost money.

What Is the Cotton Problem?



If cotton producers had produced less cotton, the price would have gone up. But they didn't. Each cotton farmer thought that he would produce more cotton to make up for the low price. If he sold twice as much cotton for the low price, he would make as much as if he sold what he used to at the old price. That is what he thought.

But every cotton farmer thought the same thing. Each one produced so much cotton that the price sank.

The United States Congress stepped in to help cotton growers. It passed a law that let the government pay cotton growers a higher price for their cotton if the growers planted fewer acres of

cotton. This was the beginning of the government's program to help farmers.

Half of Texas's cotton is produced on the dry high plains. The cotton farms there are big. They are about 1,000 acres. The cotton is irrigated by water drawn from wells.

A big irrigation system has been set up to produce cotton in Arizona. Cotton makes up half of the farmers' income in the state.

But cotton growers face many problems. They must compete with cotton growers in foreign countries. The United States government keeps the cotton prices high. Because our cotton prices are high, more foreign countries

prefer to produce their own cotton. Their cotton prices are lower. People buy cotton where the price is lowest. So our cotton farmers lose customers.

In 1947, only 16 countries in the world produced cotton. Now there are 25 countries producing cotton.

Can American cotton producers compete with cheaper foreign cotton? Can American cotton producers compete with synthetics?

Some specialists say that cotton producers do not have to worry. They say that the government keeps the price of cotton up. They say that producers get paid for their crops anyway.

Wheat

During World War II, the United States supplied many countries with wheat. The other countries could not raise

their own wheat because of the war. So wheat farmers of Texas and Oklahoma plowed the high plains. They planted more wheat.

But after the war, Europe did not need our wheat. Still, farmers went right on planting it. Wheat supplies began to pile up. Wheat prices fell. There was more wheat than could be sold.

The farmers asked the United States government to help them. The government bought up large amounts of wheat. It paid a higher price than anyone else would pay.

The extra wheat was stored in granaries. Some people don't like this buying up of unneeded wheat. They say that the government just wastes money buying the wheat. What is needed, they say, is for farmers to grow less wheat.

THE REGION'S WEALTH BUILT CITIES

Until 1900, most people in the South Central region earned their living in farming, ranching, lumbering, and mining. Most of the people lived on farms and ranches or in small towns. Except for New Orleans, there wasn't a city in the region that had as many as 100,000 people.

Texans, for example, wanted to build big cities for a long time. Why? Perhaps the map of the region will explain. For a long time, Texans were far from big cities. People of Oklahoma could go to Kansas City. People of Arkansas could shop in Memphis or St. Louis. Louisianans had New Orleans.

But the cotton producers, the lumbermen, the cattle raisers of Texas had no big cities to go to. They had to buy their supplies in the small towns of Texas. Here, they had little choice of goods. They wanted cities where they could shop, play, or borrow money from banks for business.

Still, cities grew slowly in the South Central region. There were trading towns for surrounding farms and ranches. Only New Orleans was on a river deep enough and wide enough to carry shipping to other regions and other countries. Later, a deep-water ship canal was built in Houston. Then that city also began trading with other parts of the world.

As more and more machinery was used in farming, lumbering, and mining, fewer people were needed in these industries. People began to leave the rural areas. They looked for work in the small cities.

Wealth Stayed in the Region

In the early 1900s oil and natural gas were discovered in the region. Great copper deposits in Arizona and New Mexico brought in money. Many farmers and ranchers began to earn big incomes. They leased their land to copper, oil, and gas companies. Farmers, ranchers and companies earned high

profits. Thousands of people became millionaires.

Savings grew in the region's banks. Men in the region who wanted to start new businesses could now go to their own banks. It was easier for them to get loans. They dealt with people who knew them. They didn't have to go to strangers in banks outside of the region.

New cities were formed. Old cities grew. Cities like Houston, Dallas, Fort Worth, Phoenix, Oklahoma City, and Tulsa grew. New oil and pipeline companies used some of these cities for their offices. In some, factories produced oil machinery and equipment. Oil refineries were built. A giant petrochemical industry grew up, especially around Houston.

The oil refineries and the petrochemical factories around Houston are all connected by underground pipes. Miles of pipe carry oil and other chemicals from factory to factory. There are so many pipes going so many ways underground that people in Houston call the area the "Spaghetti Bowl."

Cities Attract People and Industry

All these industries plus the great copper mines in the west of the region have brought in thousands of workers. There are office employees, lawyers, and engineers. These people earn wages and

spend part of them in the region. This all adds to the region's wealth.

In World War II, officials in Washington decided to scatter important war industries away from the manufacturing region of the North. The government decided the South Central Region was a good place to put these industries. Many military camps were put there, too.

The region has a great amount of open land. There is a lot of level ground. The climate is dry and sunny. Airplane factories were built in various cities of the region. New kinds of weapons were designed. Rockets, missiles, and jet engines were tested in the region. Factories making these goods were set up there. Air bases were scattered around the region.



Houston is one of the fastest growing cities in the United States. New office buildings are going up constantly (above). Houston also has many large oil refineries (below). The giant tubes are *cracking towers*. They help refine crude oil into products like gasoline.



The electronics industry was built up in cities of Arizona, New Mexico, and Texas. Electronics products are used by the nearby defense industries.

Cities Blow Their Horns

Each city in the region advertises its charm and unique features.

At the eastern end of the region is New Orleans. The people of this city call it "The City That Care Forgot." They also call it "The Most Interesting City in America."

New Orleans is a great port and much of the country's trade with Latin America goes through this city. It is a center of industry, finance, and education. The city still has reminders of Europe and the old South. The city is known as the birthplace of jazz, and some of its restaurants are world-famous for their good food.

Tulsa, Oklahoma, calls itself the "Oil Capital of the World." It probably is because it has more than 600 oil companies.

People in Oklahoma call their state the "Land of Opportunity." They encourage businesses to come there. They say the state is a pioneer in progress.

El Paso, Texas, claims that it gets more sunny days than any other city in the United States.

Fort Worth says it is the "City Where the West Begins."

Houston is proud that it has made itself a world port. The city tells businessmen how easily their products can be shipped in and out of Houston.

The people of Dallas are proud of their gleaming skyscrapers. They say that there is nothing they cannot do if they put their minds to it.

Crystal City, Texas, calls itself the "Spinach Capital of the World." In the middle of town is a many-colored concrete statue of Popeye.

Popeye, the cartoon sailor, is famous for eating spinach. So Crystal City, "The Spinach Capital," built a statue of him.



Opportunities and Problems of the Region



Tyler, Texas, calls itself the “Rose Capital of the World.”

Midland, Texas, sends a folder all over the world. The folder says that Midland is “An Exciting City in the Land of the Tall Sky.” Midland calls itself a truly west Texas city. Midland is a city of about 60,000 people. Many proudly claim that it has more millionaires than any city its size in the world.

Phoenix, Arizona, is proud of its healthy climate and its beautiful scenery. It is also proud of its many different industries.

These cities hope to bring in industries. They hope they will produce durable consumer goods. They want to have goods like toasters, canned goods, televisions, and radios. They want washing machines and stoves. Industries producing consumer goods give more jobs than oil refineries. They give more jobs than chemical factories.

But these industries need big markets. People make markets. Are there enough people in the region to make a big market for consumer goods?

Future of the Region

Specialists are trying to speed up the growth of the region. They are seeking ways to keep it growing. They want to bring more industry to the region. They want to improve agriculture. They want more government spending.

It is risky, however, for a region to depend greatly on government spending. Congress may decide to cut spending. It has already done so in many cases. People lose their jobs. Suddenly, many people lose their incomes.

People in the region, however, know all these problems. They are independent. They are also clever. They will find ways to keep developing their region and starting new industries. The region will be even more important in the future than it is today.

Test Yourself

1. Describe some of the early groups who settled in the South Central Region. How did they make their living?
2. Name some of the reasons why new industry might be attracted to the South Central Region.
3. How did the discoveries of gas and oil help cities to grow in Texas and Oklahoma?
4. What are some of the reasons why the South Central Region may stop growing in the future?
5. Why did the cotton farmers of the South Central Region plant more cotton during the depression of the 1930s? Why was it a mistake?

HOME ON THE RANGE

Ken Akers is my name. This is my father's ranch in Texas. This is where I live.

I like living on a ranch. Most of all, I love the animals. Someday I want to be an animal doctor. It's very important to keep animals healthy, especially on a ranch. If one animal gets sick, a whole herd can die.

Our animals are cattle, horses, sheep, and Angora goats. We get wool from the sheep. From the goats we get a kind of wool called *mohair*. Dad breeds and raises the cattle for beef. He sells most of them when they're about six months old.

Our family has lived here for a long time. My great-great-grandfather started this ranch back in the 1870s. I guess ranching has changed a lot since then. In the old days, cowboys and their horses had to do everything the hard way. Now we have machines to help us out.





For instance, Dad may want to look over a herd of cattle. But they may be far out on the range. Now he doesn't ride all the way on horseback. He just loads the horses into a trailer. Then he and the ranch hands drive out to where the cattle are. They unload the horses. Then they ride through the herd and look at each animal. It's a lot faster than the old way. It also keeps the horses fresh. Some big ranchers even use helicopters to check on their herds.

But there's much more to ranching than just herding cattle. You have to take care of the land. Cattle and sheep eat a lot of grass. A good rancher like my dad knows how to let the animals graze the land without destroying it. This is called *range management*.

A big part of range management is clearing land. This makes room for more grass to grow. Dad uses a bulldozer to do this. The bulldozer blade digs up roots and stumps. A chain hooked to the back clears away sagebrush. Sometimes Dad takes me along so I can learn to work the bulldozer. It's pretty scary, but it's fun, too. It's like riding a horse when it's galloping.





My sister Carol and I ride horses almost every day. It's still kind of hard for me to lift the heavy saddle. But once it's on, I really enjoy the ride. Sometimes we go out to the pasture to see the baby calves. Sometimes we just ride as far as we can. Then we get off and explore. There are plenty of Indian arrowheads and spearheads around here. Some of them must be hundreds of years old.



At night, Mom fixes a big meal. We all relax around the house. We don't get television out here, but there's always enough to do. We play games and do puzzles. Carol plays music for us on the piano. And Dad is teaching us all to speak Spanish.

My best friend is Trini Gonzalez. He comes to visit often. Sometimes his parents let him spend the weekend. Trini says we're his second family.



We have a new baby in the family. It's my little sister Susan. Trini and I like to help Mom take care of her.

Sometimes Trini brings a new arrowhead and we add it to my collection. But mostly we just talk about things. Trini loves the ranch just as much as I do. He wants to have a ranch of his own someday. Dad says Trini can learn about range management at the University of Texas. Maybe I'll go there, too. Trini can learn how to run a ranch. I can learn to be an animal doctor. We'll make a great team!



WHAT DID YOU LEARN?

1. Based on what you have studied in this unit, give a good definition of a manufacturing region.
2. What is meant by an “island of industry”?
3. Your text has told you that “it is cheaper to bring iron ore from Africa by ship than to pull it from Minnesota across the Appalachian Mountains.” What does this tell you about transportation costs?
4. In what ways do factories “depend on one another”?
5. The government does many things to try to help people in the many regions of our country. Explain how each of the following actions helped people in the South Central Region.
 - a) Taxing wood imported from other countries
 - b) Paying farmers *not* to grow wheat and cotton
 - c) Excusing oil companies from paying some taxes
6. What is meant by *durable* goods? What is meant by *nondurable* goods?
7. In what ways do factories serve farmers?
8. Why have so many cities grown up along the major waterways in a manufacturing region?
9. Manufacturing has been called a “mixed blessing” for cities. What do you think that means?
10. Explain what conditions might attract industry to a particular region.
11. Describe an entrepreneur. Make sure you include in your description some of the ideas he had which helped him to succeed.
12. Select one of the regions you have just studied and decide whether you think it was made by the work of man or the work of nature. Make sure you have some evidence to support your conclusion.

NO PARKING
ANY
TIME

STARK
ARTISTS

HARTNETT
GALLERY





Unit Three

REGIONS MADE BY CULTURE

There are some parts of the country where people think alike about many things. They may have the same ideas about raising children. They may have the same ideas about work and play. They may think alike about how to worship God.

The people in these regions often like the same kinds of food and the same kinds of clothing. They may have the same kind of accent when they talk.

A common way of life can make a region. It can make the region different from the rest of the country. Often, its history has been a little different from that of the rest of the country.

We call regions like this regions made by culture.

Left: The French Quarter, New Orleans, La.



Chapter 6

The Southern Region

There is a region in the United States that had a common way of life. In a way it still does. This region is so different that it has been called another country. In fact, at one time it did become a separate country.

For nearly 300 years, the people in this region, lived, spoke, and thought differently from the rest of the country.

Some say the people there have the friendliest manner, the best food, and the most pleasant land in the nation. Others disagree. But disputes have always arisen over this region.

It is changing so fast now that even the people who live there find it hard to describe exactly what it is like.

The region we shall study is made up partially of ten states known as the *Deep South*: Virginia, North Carolina, South Carolina, Georgia, Florida, Alabama, Mississippi, Louisiana, Tennessee, and Arkansas. The so-called border states—Maryland, West Virginia, Delaware, and Kentucky—lie between the North and the Deep South. They are included in the region along with the eastern half of Texas. The entire region is known as the South.

Left: Oakland House and Race Course, Louisville, 1840
by Robert Brammer and Augustus A. von Smith, Jr.

CHANGES IN THE SOUTH

Changes in Political Life

One day in December, 1968, more than 200 government officials from all over the South met in Atlanta, Georgia. Newspaper and TV reporters came to the meeting. The president of the United States sent a message. He said he was proud of these officials. He wished them success.

Why was this meeting so important? The officials were Southern black people. Not for a hundred years had so many blacks been elected to office. This was the first time black officials had ever come together in a meeting in the South.

Why should it be unusual for a black person to be a government official? Blacks had been slaves for over 250 years. They could not vote or hold government office. After the Civil War in 1865 they were declared free. But only thirty years later, the Southern states passed laws to keep blacks from voting. The laws said that no one could vote without passing a reading or writing test. No one could vote without paying a tax.

The blacks had little education, so few of them could pass the tests. They were very poor, so few of them could pay the tax.

In 1963, almost a century after the end of the Civil War, Congress did away with the tests and the taxes. At last, blacks could vote and take part in the government.

Changes in Social Life

For many years, Southern whites and blacks were separated in schools, churches, movies, restaurants, trains, and buses. Today that is not so. Laws have changed Southern customs. Blacks are taking part in community life. They stay in the best hotels. They eat in the best restaurants. In more and more places, black and white children go to the same schools.

Since the end of World War II in 1945, more and more Southerners have moved from the countryside to the cities. And people from the North have moved into the South. The "Yankees" and the Southerners learn new ideas from each other.

Television and radio bring new ideas to city and country alike. Old ideas and customs change.

Changes in Economic Life

Farming in the South has changed. Cotton and tobacco used to be the main crops. The farmer's living depended on these crops. If the prices for



these crops went down, most people became poor. They had no other crops to sell. Today, Southern farms produce many kinds of crops. There are cattle farms, tree farms, chicken farms, dairy farms, and fruit and vegetable farms. Southern farmers do not have to depend upon cotton and tobacco only. They are earning higher incomes.

Since 1958, jobs in Southern factories have increased twice as fast as those in the rest of the United States.

Southern wages are much higher today than they used to be. Still, the average wage is lower than it is in the rest of the country.

Southern cities are growing. The population of Atlanta has doubled since 1950. It is the biggest trading center in the Southeast.

In Texas, Houston and Dallas are large centers of industry, science, and education. Some of the biggest chemical companies in the country have been

built along the Texas and Louisiana coast.

Huntsville, Alabama, had 16,000 people in 1950. In 1969, Huntsville had 130,000 people. Rockets are built

there for the United States space program.

Florida has big resort cities like Miami. Cape Kennedy is where the spaceships are launched.

WHAT SHAPED THE SOUTHERN WAY OF LIFE?

Climate

All the states of the Deep South, except for Arkansas and Tennessee, touch either the Atlantic Ocean or the Gulf of Mexico. Winds from the ocean and the gulf bring moisture over the land.

All but three of the Southern states are formed in part by the Appalachian Mountains. These mountains are rain catchers for the water-heavy winds and clouds that blow in from the sea. Rainfall in most of the region is plentiful. More than 45 inches of rain falls every year.

Mostly the days are sunny in the South. The summers are long and hot. The winters are short. Snow falls only rarely. So the growing season is long. In some parts of the South, the growing season is nine months long. This

warm, wet climate encouraged Southerners to farm for a living.

The mild climate permits people to live outdoors much of the time. It encourages outdoor sports and other outside activities.

The Land

The South has several subregions. They have played important parts in the history of the region. These subregions have also influenced the way of life in the South.

The Coastal Plain. A low plain extends along the Atlantic from Virginia to the tip of Florida. From there, it stretches around the Gulf of Mexico to the southern edge of Texas. In some places, this plain is 100 miles wide. In other places, it is about 250 miles wide. The first English settlers on this con-

continent settled on the coast of Virginia. This area is called the *Tidewater*.

The Tidewater is a fertile land crisscrossed by rivers. The rivers flow down from the Appalachian Mountains to the sea. They carry with them rich soil which they deposit on the Tidewater land. The land is so low that ocean tides come up the rivers, causing them to rise. Land near the mouths of these rivers sometimes gets flooded at high tide.

The first great cotton and tobacco plantations were here on the Tidewater. From our earliest history, it has been a land of farmers with large farms. But by the early 1700s, most of this area was settled. Also by this time, some of the soil was worn out. So people began to move west.

The Piedmont The name for this hilly area is a French word which means "foot of the mountain." The *Piedmont*

A painting of a Tidewater plantation about 1825. Big plantations were almost like small cities. They had houses for the slaves. They had mills, stables, and storehouses. Often, there was even a church.





The Cumberland Gap is a pass through the Appalachian Mountains. Early settlers used this pass to reach Kentucky and other western areas. Here, Daniel Boone leads a group of settlers through the Gap.

[PEED-MONT] is at the foot of the Blue Ridge Mountains. The soil in the Piedmont valleys is fertile. But the farms are smaller, and farmers had to work harder than in the Tidewater.

The Blue Ridge Mountains West of the Piedmont rise the Blue Ridge Mountains. They are part of the Appalachian Mountain Range.

For many years, the mountains kept settlers from moving west. But after the middle 1700s, hunters and explorers found gaps in the mountains. Daniel Boone was one of these hunter-explorers. Now the colonists could move further westward.

Some of the hunters and their families stayed in the mountains. But life

was very hard. The mountains kept people from the rest of the world. People had to do everything for themselves. They developed a strong feeling of independence.

These mountain people kept their old ways and customs. They kept their old ways of talking. Parents taught the old songs to their children. Even today, life has not changed as much there as elsewhere.

The Mississippi River Valley More new settlers came to America. They were hungry for land. To find new suitable land, they crossed the Tidewater, the Piedmont, and the Blue Ridge Mountains. Finally they crossed over into the Mississippi Valley.

This great valley was formed by two rivers, the Mississippi and the Missouri. All this land had belonged to France and was called Louisiana. But in 1803, the United States government bought the Louisiana Territory.

Southerners moving into the area found other people already there. There were French and Spanish settlers in what is now the state of Louisiana and in towns along the Mississippi. In eastern Texas, the newcomers found Spanish and Mexican settlers. For the first time, Southerners found many other people around them with different languages, different ways of thinking, and different religions.

Everybody benefited from the Mississippi and Missouri rivers. The rivers brought rich topsoil in their waters and deposited it on the land. The rich soil encouraged people to farm cotton.

The Mississippi River is also a highway. Ships from all over the world brought goods to the mouth of the Mississippi. Goods were taken from the ocean going ships and put on flat-bottomed boats that could go for hundreds of miles up the Mississippi. This connected people of the valley with the rest of the world.

At points where goods were loaded and unloaded, great cities grew. Some of these cities are New Orleans, St. Louis, and Memphis.

The Plantation System

For over 300 years, farming was the most important way of earning a living. The first farms in the South were *plantations* along the tidal rivers. A plantation is a large farm that produces one or two major crops. Some plantations specialized in raising tobacco. Others specialized in rice, indigo, or cotton. The plantations sold these crops to England. They received income from the crops. Then they bought the goods they needed from England.

It was difficult to run the plantations. Workers were scarce. Tools were scarce. It took a lot of workers to plant and weed the big crops.

In the 1600s, many poor English colonists came to America. They could not pay the fare across the ocean. So they became *indentured servants*. That is, they promised to work for a landowner in America for a number of years. Usually it was seven years. When they finished their term of years, they were free to do as they pleased. Most of them left the plantation. Some got farms of their own.

During the 1600s, European ships and, later on, ships from New England brought black Africans to work in America. Many blacks had been kidnapped from their tribes. At first, the

Africans were indentured servants, too. They became free when they finished their term of years. They owned land and employed indentured servants of their own. But gradually this changed. More and more workers were needed. The planters also needed workers who would stay on the plantation all the time. The only way to keep people there was to make slaves of them. So an important change came about. Virginia lawmakers passed slave laws. They said that any black people coming to Virginia who were not Christians were slaves. Their children were also slaves. Since most blacks in Africa had never heard of Jesus Christ, they were not Christians. Eventually, most blacks became slaves. By 1776, two out of every three persons in South Carolina were slaves!

Slaves were thought of as property. They had no choice about their own lives. They were bought and sold for profit.

The planters had to hire overseers to run the work of the plantations. The overseers watched over the slaves' work. The plantation house was run by the planter's wife. She gave orders to all the household slaves. The planters were often away from the plantation. If they had several plantations, they had to have an overseer for each one.

The overseers' main job was to produce big crops. They worked the slaves very hard. Some overseers were cruel to the slaves.

There were disadvantages in using slaves. They had to be fed and cared for even if the plantations earned no income. Some slaves could not work in the fields. Some were too young. Some were too old. When slaves became sick, they could not work. In many ways, slavery was expensive and wasteful, as well as cruel.

Still, planters bought more slaves. People looked up to those who owned many slaves. Slave owning was a sign of wealth and importance.

Ideas About “The Good Life”

The big plantation owners were leaders. They were rich and powerful. They owned the best land. They had the finest houses and many servants. They acted like English country gentlemen with lots of land and leisure.

The planters' families spent their summers in the cool mountains or at the seaside. Some even traveled to Europe. The overseers and the slaves stayed home and did the work.

Southerners believed that farming brought out the best in men. People were happiest when they were close to



It took many people to plant and pick cotton (above). Some big plantation owners kept hundreds of slaves.

Slaves had no legal rights. The masters made the rules. The slaves had to obey. A slave who displeased a white man might be beaten or even killed (right).

At slave markets like the one in Richmond (below), people were sold like farm animals. Families were torn apart. One rich planter might buy the husband while another bought the wife. Husband and wife would never see each other again.



nature and when they spent lots of time out of doors. They thought that people who lived in cities were mean and greedy. Crowded cities were ugly and harmful. Factories created poverty and misery.

Because of these ideas, planters used their savings to buy more land. They bought more slaves to work the land. Few factories or businesses were started. Many Southerners thought that factory or store work was beneath them. They were “gentlemen” and, as such, did not do that kind of work.

Although rich planters were the most powerful people in the South, there were not many of them. Most Southerners lived on small farms. Many of them were against slavery.

The small farmers, however, were not able to take part in the government. In some states, a farmer could not vote or be elected to a government office unless he owned at least 500 acres. He also had to own at least 10 slaves.

Most Southern farmers did not own that much land. Half of them had no slaves at all.

Attitudes Toward Education

The rich planters hired tutors for their children, or they sent them to private schools. They did not want to support

public education. They did not see why they should pay for the education of poor families' children. They did not want their slaves to learn to read or write. All but two Southern states had laws against teaching blacks. They feared that knowledge would make the slaves unhappy with their lives.

Isolation

The plantations were large and far apart. There were few towns and cities. People could not get together easily. It was hard to find out what was going on in other parts of the country.

There were not enough roads. Many roads were in bad condition. Farmers had trouble getting goods to market. It was lonely on the farm. It was fun to entertain relatives and friends when they came visiting. Hospitality became an important part of the Southern way of life. Family ties were strong.

On the big plantations, the owners or the overseers made the rules. They kept order. Each family took care of itself. People settled troubles in their own way. It was like living on the frontier. The rifle, not the sheriff, was most important in keeping order.

Their independent way of life made Southerners suspicious of government. They wanted to be governed as little as possible.

WHAT TESTED THE SOUTHERN WAY OF LIFE?

The Declaration of Independence

One of the South's most famous political leaders was Thomas Jefferson, of Virginia. He believed slavery was wrong. He wanted the slaves to be freed gradually.

Thomas Jefferson wrote the Declaration of Independence in 1776. In it, he gave the reasons why the colonies wished to be free from English rule. These are his words: "We hold these truths to be self-evident, that all men are created equal." He believed that God gave all men certain rights. No man can take away these rights. Among these rights are "life, liberty and the pursuit of happiness."

After the Revolutionary War, many people in the South agreed that slavery should end. When George Washington died, all his slaves were set free. Other planters freed their slaves. Legalized slavery, however, still existed.

In 1808, Southern and Northern lawmakers passed a law in Congress. The law said that no more slaves could be brought into this country.

Slavery might have come to an end in the South at this time. But events took place that made planters change their minds about giving up slave-owning.

Southern settlers who came into Louisiana started sugar plantations. The plantations needed many slaves.

More important was the increasing demand for Southern cotton. The invention of the cotton gin led to many new textile mills in England and in New England. These mills used lots of cotton.

Cotton prices rose. More and more land was planted with cotton. New cotton plantations started all over the South. Cotton plantations had to have slaves. This meant more slavery.

Slave Revolts

Nobody knows how many slave revolts there were in the South before the Civil War. If slaves revolted, the punishment was severe. The leaders were beaten, burned, or hanged.

The most famous revolt was led by Nat Turner, a slave preacher in Virginia in 1831. He felt that God wanted

him to lead the slaves to freedom. A few slaves joined him. They killed Turner's master and his family. They also killed other whites. Finally, the revolt was stopped.

Turner and his fellow rebels were hanged. So were a dozen other blacks who were thought to be in the revolt. After that, no serious slave revolts are recorded.

To prevent revolts, the slave states passed severe laws. Slaves could not gather in groups unless white people were present. Blacks could not be outside after dark. They could not have weapons.

A slave family makes a dash for freedom. Slaves who reached the Underground Railroad could get help in their escape attempts.

The Abolitionist Movement

Abolitionists were those people who wanted to "abolish," or do away with, slavery. In the 1830s, some of them organized an escape route for slaves.

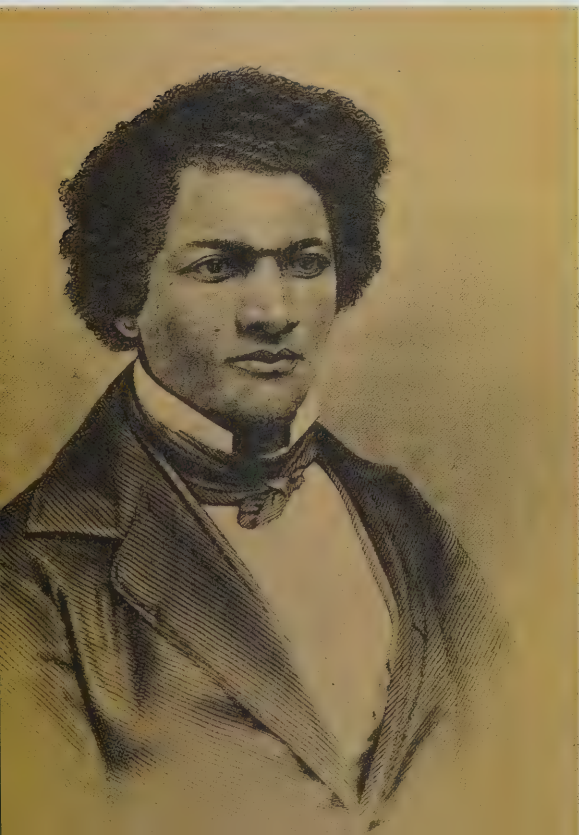
The Underground Railroad It was a network of many hiding places about a day's walk apart. Slaves were told how to escape from the plantations. At night "conductors" led the slaves from "station" to "station." Even in the North, the slaves had to be hidden. The law said that runaway slaves found



in the North had to be returned to their owners. For many slaves, the Underground Railroad ended in Canada.

Just before the Civil War, some slaves were worth as much as \$2,000 to their masters. A runaway slave meant more than a loss of money to his owner. He also meant the loss of a good worker. Southern planters believed that slaves were private property. They could not understand why some Northerners refused to return their property to them. Bitter feelings grew between the South and the North. Some Southern leaders began to make speeches and write books saying that

Frederick Douglass, who escaped slavery and became a great abolitionist leader.



slavery was good. They said that slaves were clothed, fed, and cared for when sick. They said that in the North the people were free but were paid very low wages. They said that Northern factory workers had no one to take care of them. They said that slaves were taken care of.

Frederick Douglass The abolitionist crusade against slavery spread. One man who worked long and hard for the abolition of slavery was Frederick Douglass, a black man born a slave.

Douglass was born on the Eastern Shore of Maryland in 1817. His mother was a slave. His father was a white man. As a child he was taken away from his mother.

His master's wife taught him how to read and write. When the master found out, he sent Frederick to a "slave tamer." He was whipped every week. His bones ached all the time.

When he was twenty-one, Frederick escaped to New York. He married a free black woman. They settled in New Bedford, Massachusetts, where he made a living as a handyman.

Whenever he could, he studied abolitionist newspapers. He went to meetings held by abolitionists. He spoke well at these meetings, so, in 1841, he was hired to be a lecturer for the Massachusetts Anti-Slavery Society.

For twenty years, Douglass traveled in the North and in Great Britain, giving speeches. He told of his experiences as a slave. He begged people to join the struggle against slavery. He told his listeners that blacks should take their rightful and equal place with whites in American society. Freedom from slavery was the first step. To help them take this first step Douglass set up an Underground Railroad station in Rochester, New York.

In the South, the abolitionists were often attacked by mobs. They were not allowed to make speeches. By the 1840s, feeling about slavery was very strong in the South. Southern newspapers and magazines dared not print articles against slavery. Few people dared to speak out against it.

Economic Conflicts

Much of the South's cotton was sold to New England textile mills. From their earnings, Southern planters bought manufactured goods from New England. North and South depended on one another. There should not have been conflicts between them. But conflicts grew.

Southern planters had to use Northern banks when they wanted loans. They complained that the banks charged high interest rates. The bank-

ers said that they had to charge high rates because of the great risks in cotton planting. Many planters were in debt to the bankers.

Southern planters complained that Congress helped Yankee manufacturers and hurt the planters. They could buy foreign goods more cheaply than Northern goods. But Congress passed tariffs, or taxes, on foreign goods. This made them more expensive. After the 1840s, tariffs were lowered. This conflict then died down.

Political Conflicts

Most of the other conflicts between the North and the South had to do with slavery.

The Mason-Dixon Line East of the Mississippi River, the border separating the free and slave states was the Ohio River and the *Mason-Dixon Line*. This imaginary line was named for two Englishmen who surveyed the line in 1767. The line formed the border between Delaware and Maryland, and between Pennsylvania and Maryland and West Virginia.

North of the Mason-Dixon Line and the Ohio River were 11 free states. South of them were 11 slave states.

In 1820, the people of Missouri asked to enter the Union as a slave

state. Missouri was the first area in the large Louisiana Territory to ask to become a state.

This created a great argument. Abolitionists did not want to have 12 slave states and only 11 free states. This would mean that the slave states would have more votes in the Senate.

They also pointed out that Missouri was part of the Louisiana Territory. If Missouri came in as a slave state, did that mean that all other states from the territory would also be slave?

The Missouri Compromise Congress agreed that Missouri would be allowed to join as a slave state. But happily, the people of Maine also wanted to join the Union—as a free state. If Missouri joined as a slave state, it was agreed that Maine could join as a free state.

Congress also agreed that north of a line drawn through the Louisiana Territory no state could join the union as a slave state. South of the line Congress agreed to make no laws against slavery. By 1821, there were 12 free states and 12 slave states.

The Compromise of 1850 In 1849, gold was discovered in California. People poured into California. So many came that California soon had enough

people to become a state. The people in California asked to become a free state.

Now the South was angry. Arguments in Congress grew hot. The Southern states threatened to leave the Union. But in 1850 Henry Clay, a lawmaker, found a way to calm both sides. He suggested several laws, which are known as *the Compromise of 1850*. Congress passed the laws. One of them made California a free state.

Another law was about runaway slaves. Runaway slaves, or suspected runaways, could be arrested and handed over to a white person who claimed them. The white person did not have to prove that he was the real owner. Black people could not say anything in their own defense. They could not ask for a jury trial. Even free blacks could be handed over to any white who claimed them.

Government agents who did not arrest runaway slaves or suspected slaves were fined \$1,000. Anyone who helped slaves to escape was fined \$1,000. Rewards were offered to any who helped to catch slaves.

This law made Northern abolitionists angry. Many refused to obey it. Southern slave owners were also angry. They said the law was not being carried out. So the conflict deepened between the South and the North.

WHAT CHANGED THE SOUTHERN WAY OF LIFE?

In 1860, the Republican party won the elections. Abraham Lincoln became the new President.

The Republican party promised that there would be no slavery in the new Western states. They promised that escaped slaves would not be sent back South without a jury trial.

The people in the South were angry and alarmed. They feared that slavery and the Southern way of life would not last with Republicans in power.

Eleven Southern states withdrew from the Union. They were Virginia, North Carolina, South Carolina, Georgia, Florida, Mississippi, Alabama, Tennessee, Arkansas, Louisiana, and Texas. They formed a new government, and a new country. They said they did not belong to the United States of America. They called their country the Confederate States of America. Their president was Jefferson Davis. Their capital was Montgomery, Alabama. Later Richmond, Virginia, became the capital.

Southern soldiers attacked a United States fort at Charleston, South Carolina, in 1861. President Lincoln sent United States soldiers to fight them.

The War Between the States, or the Civil War, had begun.

The Civil War

For the next four years, a war raged that took more American lives than any war in history. It divided the people of the United States. In many families brother fought against brother.

Early in the war, slaves worked in gun factories and did much of the heavy work for the Confederate Army. Then, in 1863, Lincoln announced the *Emancipation Proclamation*. It said that all slaves in the states fighting against the North were freed. Slaves were not freed, however, in the border states that did not join the Confederacy.

As the Union armies moved into the South, more and more slaves escaped from their Southern masters. Some joined the Northern armies.

The Civil War was a total war. That is, it was not fought just on a battlefield. Civilians also were killed. Farms were burned. Houses were destroyed. Entire towns, like Atlanta, were nearly burned to the ground.

The Northern armies not only won on the battlefields. They actually de-



Many young men like these Virginians joined the Confederate Army. They felt more loyal to the South than to the United States.

stroyed the economic and social life of the South.

The results of the war were terrible. Southern fields, towns, and factories were smoking ruins. Almost every family lost some loved one.

This Civil War was a great turning point in history. It reunited North and South. It saved the Union. It destroyed slavery.

By the time the war ended, many slaves were free. But where could they go? What could they do? Many died of hunger and disease.

Constitutional Amendments

The Civil War ended in 1865. Before the Southern states were allowed to join

the Union again, they had to promise to make new state constitutions. They had to give blacks the right to vote. They had to give them equal protection by law.

In 1865, Congress passed the Thirteenth Amendment to the Constitution. This amendment freed all slaves. But it did not make them citizens.

So, three years later, Congress passed the Fourteenth Amendment. It said that all persons born in the United States were citizens. Blacks born in the United States thus became citizens. This amendment said that all persons should have equal protection by law and that states could not take away a citizen's life, liberty, or property.



Charleston, South Carolina, lay in ruins after the Civil War. Charleston, Atlanta, and other Southern cities were burned by Northern soldiers. Many farms and plantations were destroyed also.

Congress passed the Fifteenth Amendment in 1870. It said that the right to vote could not be taken away from anyone because of his race or color. It could not be taken away because he had been a slave.

Many Southerners disliked these laws. But they had to give in. They waited, nevertheless, for their chance to get around the laws.

Sharecroppers

Many plantations had been destroyed during the Civil War. The planters' wealth was gone and so was their power. Many moved away. But some

stayed. They had no money, so they could not pay wages. They let poor whites and blacks farm parts of their land. Some tenant farmers paid rent. Others paid by sharing a part of the crop with the landowner. They were called *sharecroppers*.

The change from being slave to being free was not easy for the blacks. A few were given land by the government. Northern politicians promised each black man 40 acres and a mule. But this promise was not kept.

Blacks did not receive credit from the government. So they could not begin a new life. Most of them just stayed

on the tired land and became tenants or sharecroppers.

The Freedman's Bureau

To help the needy, Congress set up the Freedman's Bureau. Many Northerners came South to help the bureau. Food and clothing were given out. Hospitals were set up. Blacks were helped to find work and fair wages. Classrooms were set up in cabins, churches, and even jails. Almost half a million blacks got some education.

The Southern whites called those who came from the North "carpetbaggers." This was because many of them carried all their belongings in a bag of carpet material. Southerners thought that all carpetbaggers were crooked. Not all Northerners were crooks, as Southerners claimed. Some were honest businessmen who came to start new businesses.

Northern churches also helped the needy. They built schools for the blacks. Some of the schools became famous. In Nashville, Tennessee, Fisk University became a great university. Clark College and Morehouse College were founded in Atlanta. Howard University was started in Washington, D.C.

Reconstruction

Congress was not sure that the Southern states would give Negroes their

rights. So the South was divided into districts. A general with soldiers was put in charge of each district.

The army watched over voting and kept order. This was the beginning of the period called *Reconstruction*. During these years, blacks voted and held office. Twenty or more were elected to Congress.

Blacks and whites served together in the state governments. Whites were usually in the majority. Some used their power for their own good, not for the good of the public. They became rich at the cost of the voters.

The army stayed in the South for twelve years. Then it went home. The Reconstruction years were over.

Attempts to Halt Change

By the 1880s, the Southern whites were again in control of the state governments. They tried as soon as possible to return the South to the way they remembered it before the Civil War. Southern courts said that since the word *Negro* was not mentioned in the Thirteenth, Fourteenth, and Fifteenth Amendments, blacks did not have the rights declared in these laws. No one challenged this court decision.

Years later, in 1896, the United States Supreme Court ruled that Negroes had "separate but equal" rights. This meant that segregation was all

right. *Segregation* means keeping blacks and whites in separate schools, restaurants, hotels, and other places.

Negroes claimed their rights were threatened or hurt. White men dressed in white sheets rode through the countryside at night. These men were members of the Ku Klux Klan. They frightened, hurt, and even killed some Negroes. The Klan was formed to keep the black "in his place." They also threatened whites who said that blacks were as good as whites.

The South returned to its old ways. But the blacks did not forget their equal rights. They were determined to have them someday.

The New South's Industry

After the Civil War, cotton was still the most important item of the southern economy. But year after year, cotton prices were low. The South was producing too much cotton. Other countries now began to grow cotton. This helped keep the price low. The South stayed poor.

The only hope was to bring in industry. Southern leaders advertised in newspapers and magazines all over the United States. They told businessmen that they could earn high profits in the South. Southerners would work for very low wages. Labor unions were weak in the South. State taxes were low.

Businessmen listened and then acted. They set up new industries using unskilled workers. Most of these workers had been farmers who were used to working from sunrise to dusk for little reward. They hoped for a better life in the growing industrial towns.

Textile Mills Many mills opened, from Virginia to Georgia. They produced thread and cloth. Workers in these mills needed little skill, so wages were very low. To keep alive even women and children had to work long hours. They made hardly enough to live on. They hardly ever got out of debt.

Tobacco Factories The cigarette-making machine was invented after the Civil War. The tobacco industry grew fast. Factories were built in Durham and Winston-Salem, North Carolina, and in Richmond and Lynchburg, Virginia.

Work in the tobacco factories was hard. The hours were long. The pay was low. But many blacks flocked to them. They found it easier to get jobs in these factories than in textile mills. They also felt that they were much better off there than in the cotton and tobacco fields.

The profits from tobacco were used to build new industries. Some of the profits were used to build universities

and hospitals. The Duke family in North Carolina founded Duke University. It is one of our nation's finest schools. Using profits to improve education and health for all was a new idea in the South.

Steel Industry Large deposits of coal and iron were found in northern Alabama. Steel furnaces were built. A town grew up. It became Birmingham. In 1880, it had 3,000 people. Forty years later, there were 132,000 people living there. Chattanooga, Tennessee, also became a busy steel town.

Oil Industry In the early 1900s, oil was discovered in Texas, Louisiana, and Arkansas. Many Southerners found oil on their land. They became "oil rich." This income helped to build new industries. Southern savings began to flow into Southern banks.

Poor People Unite

For many years after the Civil War, cotton and tobacco farmers fell upon hard times. The more cotton and tobacco they produced, the more the prices for these crops fell. And so it went. The farmers got more and more into debt.

They became desperate. They blamed the railroads for high freight rates. They blamed the Northern factories

for high prices of manufactured goods. They blamed the government for the lack of money for trading.

All over the United States, farmers had about the same problems. Only by uniting could they hope to solve them. In 1890, they formed the People's party, also called the Populist party.

The party demanded that the government own the railroads. They demanded that the government print more money. They wanted the government to control big business. They said that big business charged too high prices.

The power of the party grew in the South. Poor white farmers and poor black farmers worked together to elect officials to help them.

Some white people worried about whites and blacks combining in their common interest. They found ways to split up the People's party in the South.

These Southerners made laws that said people could not vote unless they passed reading and writing tests. Other laws stated that people had to pay a tax before they could vote. Poor and uneducated people, both black and white, were kept from voting.

Some laws separated blacks from whites in trains and street cars. Blacks were kept out of hotels, or restaurants, owned by whites. Black children were separated from white children in schools.

The idea behind these laws was to make blacks feel that they were not as good as whites. The laws also were to make the poor whites feel that they were better than the blacks. Hate was stirred up among the poor. The People's party lost influence.

Black Leaders

Two of the most famous black leaders since the Civil War were Booker T. Washington, born in 1856, and William E. B. Du Bois, born in 1868.

Both came from poor families. Both received help from friends and neighbors to go to school. Both were well educated, Washington at Hampton Institute and Du Bois at Fisk University. But they did not agree on how to help blacks have a better life.

Washington thought that black people should be trained to earn a living with their hands. After they became financially independent, then whites would respect them. He founded Tuskegee Institute in Alabama. Under his leadership the school became a famous center for training blacks in farming, handicrafts, and trades.

Du Bois helped organize one of the first civil-rights groups in the United States in 1910. It was the National Association for the Advancement of Colored People. It is called the NAACP for short.

Du Bois became impatient with the slow progress that blacks were making. He said that learning trades would not open doors for blacks. He believed that they should have educated leaders to fight for freedom and equality. He urged blacks to vote and to take part in politics.

The Great Depression

Times were bad in all of America during the 1930s. Factories and stores had little business. Goods piled up because people could not buy them. Factories produced less and less. Then fewer workers were needed. Many people lost their jobs.

People who had savings in these businesses lost their savings. Farmers lost their farms because they could not sell their crops. By 1933, there were fourteen million people without jobs in the United States. People called these times the Great Depression.

There was much suffering in the South. Textile mills did not want to buy any cotton. There was no market for their cloth. Cotton prices fell lower and lower. In 1929, a pound of cotton sold for the low price of twenty cents. By 1931, the price had dropped below five cents.

In 1933, the Depression was at its worst. Then Franklin D. Roosevelt became president. He promised that the



The Great Depression hit the South hard. In Southern towns and cities, jobless men sat and waited for better times (above). Southern sharecroppers (below) could not sell their cotton. Many lived in rundown shacks. They had little money for clothing or even food.



government would help people. He promised to get business started again.

Congress gave money to the states so that they could buy food and clothing for the poor. One out of every six people in the United States needed such help.

Jobs were needed for millions of people. State and local governments built new roads and parks. They built playgrounds and libraries. The United States government paid the bill. In this way, millions of men and women got jobs.

The United States government tried to find ways to raise the prices of farm crops. Farmers were asked to plant less wheat, tobacco, and cotton. If farmers produced less of these crops, perhaps the price for them would rise. This did happen. Furthermore, the government promised to pay farmers if they would not plant crops on part of their land.

Many Southern farmers earned more by not farming their land than by farming it. The soil had a chance to rest. The farmers had the chance to think of better ways to use their land. They planted tree farms or pastures on hilly land, which had been useless for cash crops like cotton or tobacco.

In 1938, Congress passed a law that helped workers. It prevented children under 16 from working in certain busi-

nesses. It set the minimum wage, or the lowest salary, people could be paid. It set the maximum number of hours a week workers could work.

Another law helped people who lost their jobs. This law also helped the blind and the needy.

The United States had never had such programs. These laws were a great help to the South.

With government aid, more money than ever before was spent on schools. There were classes where adults could learn to read, write, and count. They also could learn skills and trades. Many teachers in these programs were blacks. For the first time, they had a chance to use their skills.

In the Depression years, the Tennessee Valley Authority was started. It is called TVA for short. The TVA made great changes in the valley. Dams were built on the river and its branches. The dams stopped harmful, yearly spring floods. The lakes that formed behind the dams were used for recreation.

TVA's greatest importance was the production of electricity. TVA sold it cheaply. Many homes could now have electric lights. Many factories were built in the valley because power was cheap. Living conditions in the whole valley improved.

World War II

Many poor whites and blacks fought for their country during World War II. When they came back, they were no longer content to spend their lives on small farms. They wanted to live better lives. Some left the South. Those who stayed found that the region had changed in many ways.

There were more choices for jobs after World War II than there had been before. There were also more big cities.

Congress passed the G.I. Bill of Rights, a law to help the veterans. The government paid their education in high school, trade school, or college.

The government also helped veterans to buy homes. Those who wanted to set up their own small businesses could borrow money easily from the government.

Thousands of young whites and blacks in the South took advantage of these laws. Sons and daughters of sharecroppers and tenant farmers now had a chance to better themselves.

The Supreme Court

Separate schools for white children and black children existed even after World War II. Then, in 1954, the Supreme Court declared that segregation of

blacks and whites in public schools was against the Constitution. In 1955, the Supreme Court ordered Southern schools to open classrooms to both white and black children.

In some states of the Deep South, about half the population was black. White schools there were slow to open doors to black children. Many other schools in the South did open their doors.

It was difficult for black students who entered white colleges and universities in the South. They had to be protected from angry whites by the police. But gradually people got used to the idea. Today, white and black students study side by side.

Civil Rights Movement

Mrs. Rosa Parks was a black woman of Montgomery, Alabama. One day in December 1955, she got on a city bus. She was tired, so she sat down in the middle of the bus. This was against the state law. Blacks were supposed to ride in the back of the bus. The bus driver told her to go to the back of the bus. There were no empty seats back there. Mrs. Parks refused to give up her seat. So she was arrested.

The blacks of the community did not let this pass without protest. The civil rights movement grew. A young

minister named Martin Luther King, Jr., became leader of the movement. Under his leadership, the 50,000 blacks in Montgomery refused to ride buses until bus segregation was ended. They walked to work for nearly a year.

Blacks were the bus company's main customers. When they did not ride the buses, the bus company lost money. It was going bankrupt. Finally, after almost a year, the black people won.

The movement spread to other southern cities. In 1956, the Supreme Court declared that segregation on buses was unconstitutional.

The Montgomery movement was unusual because blacks refused to use violence. Even when attacked by white gangs, they did not fight. Dr. King asked them not to resort to violence.

The civil rights movement grew rapidly. In 1963, about 100,000 blacks and some whites joined to march on Washington, D.C. They held a meeting in front of the Lincoln Memorial. It was the hundredth birthday of Lincoln's Emancipation Proclamation. The marchers asked Congress and President John F. Kennedy for a strong civil rights law.

The next year, the Civil Rights Act was passed. This law made it easier for blacks to register as voters. Discrimination in most hotels, motels, restaurants, gasoline stations, and places of amusement was now against the law.

Public parks, swimming pools, and libraries were ordered open to blacks too.

Progress is being made toward equality between blacks and whites. But in 1968, Martin Luther King was killed. He was killed because some people did not want blacks to have equality with whites. Some blacks now thought that nonviolence was not the way to make quick progress. They began to talk about *black power*.

Black power means different things to different people. To some it means the use of force. To most blacks, black power means that they must struggle for equality on their own. They cannot count on help from whites.

Dr. Martin Luther King, Jr., speaks to marchers in Washington, D.C., 1963. The marchers were asking for stronger and better civil rights laws.



The South is changing. And so is all the rest of our nation. In a short time, great progress has been made through the efforts of brave people. They have spoken out against injustice. Sometimes they have risked their lives, but they have faith in the future.

The hopes of the black people were expressed by Martin Luther King, Jr.:

I have a dream that my four little children will one day live in a nation where they will not be judged by the color of their skin but by the content of their character.

THE SOUTH LOOKS TO THE FUTURE

Today, the South is a busy, hopeful region. Gleaming skyscrapers rise over Atlanta. Giant oil refineries cover part of Texas. Businessmen with savings move into the Southern region.

At the same time, there are families starving in Mississippi. Hundreds of coal miners are without jobs in the Tennessee mountains. Some of the best minds and talents of the South are leaving for other regions.

Still, the South has plenty of land and other resources. It has lots of people, white and black, who want to build a new South. Young white and black people are beginning to serve in the government. These new Southern leaders have new ideas. Their ideas will help to build a new South. It will be a South where all will have the same opportunities for a good life.

Ralph McGill was the well-known editor of the newspaper *The Atlanta*

Constitution. Many Southerners agree with something he once said, "To be a Southerner is not easy. But it is the most delightful and wonderful experience of all."

Test Yourself

1. Why did the climate of the South encourage Southerners to farm for a living?
2. The cotton gin was a machine that could pick the seeds out of cotton faster than could be done by hand. How did this affect the demand for slaves?
3. In what ways did the abolitionists try to fight slavery?
4. Describe some of the problems facing the newly freed slaves after the Civil War.
5. How is the South changing today?

THE SOUTH'S GIFTS TO THE UNITED STATES



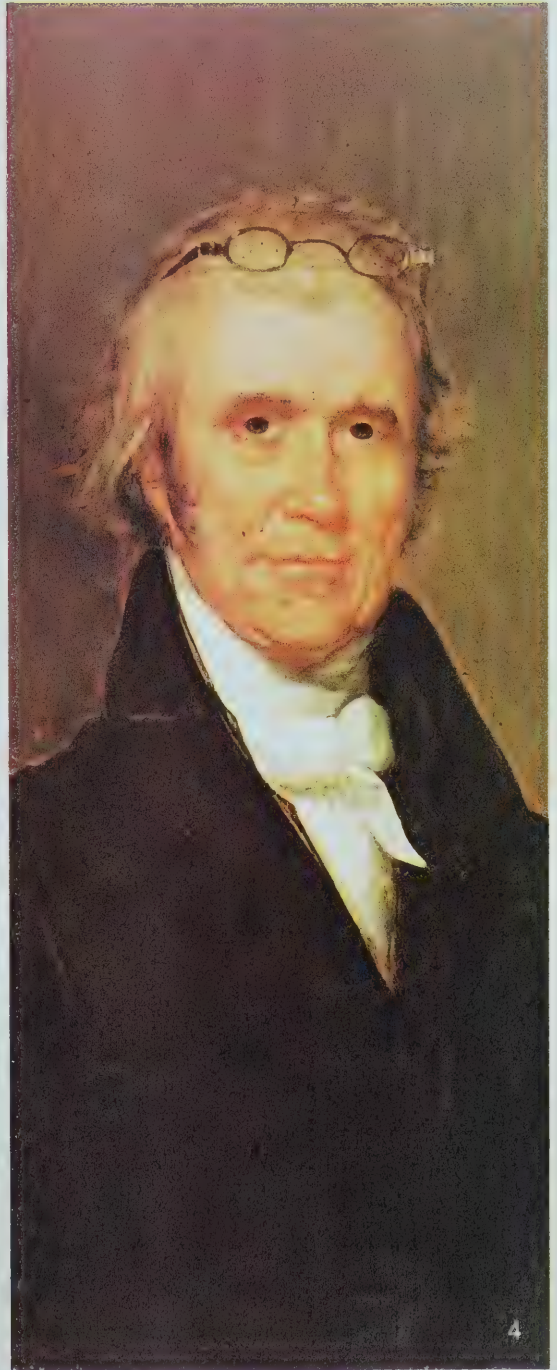
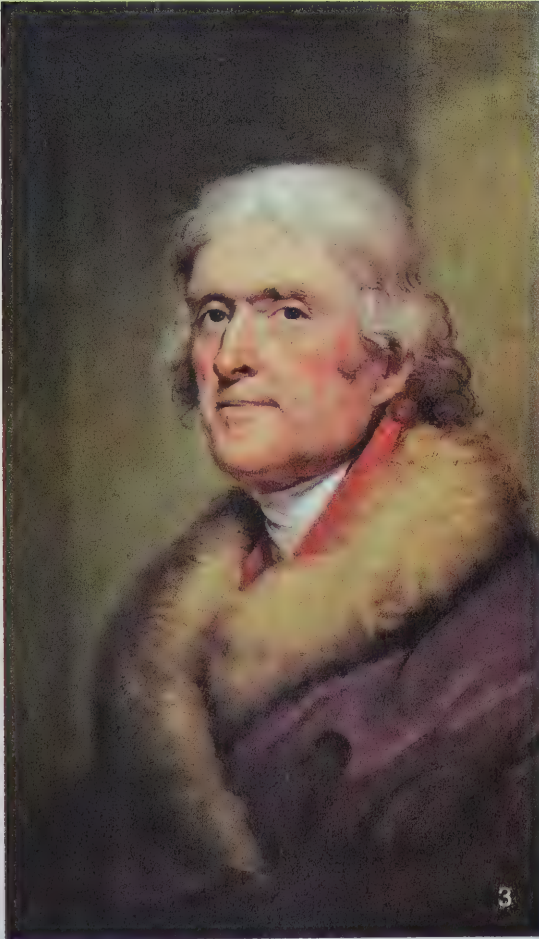
The South has contributed much to the development of the country. The first English settlement was in the South.

People in the South developed a way of life based on the country life of England. Great plantations like Westover on the James River were built (1). William Byrd was the owner of Westover. He and men like him lived much like English country gentlemen.



These men felt their patriotic duties strongly. They all had a love of public service. This society produced most of the nation's leaders in the early years. Nine of the first twelve presidents were from the South. Among them were George Washington (2), Thomas Jefferson (3), James Madison, and James Monroe.

The South also produced most of the judges, diplomats, and generals in the early days. John Marshall (4) was one of the most famous Chief Justices of the United States.





Southern planters created wealth for the new nation. Cotton and tobacco brought in money from all over the world (5). Textile mills in New England were built to turn Southern cotton into cloth. Cotton created new industries.

The South loves its past. It has respect for many old customs and traditions. Southerners try to change old ways slowly to fit present-day needs (6). In this way a nation can keep up to date without losing touch with its past.

For a long time most Southerners lived on farms. They told stories about their ancestors and their relatives. They recounted stories of the Civil War. Almost every Southern family had some relatives who were in the war.





Children listened to those stories. Later they began to write about what they had heard. They made up stories of their own. As a result, the South has produced many good writers. William Faulkner (7), Katherine Anne Porter (8), Tennessee Williams (9), and Carson McCullers (10) are some of these writers.



They write about family histories. They write about the beautiful southern land and climate. Many now write about how Southern life is changing to meet the changing needs and wishes of Southerners.



Chapter 7

The Four Corners Region

There is a big pink square of cement in the West. It marks the only spot in America where the corners of four states come together in one point. This is why the area is called the Four Corners Region.

Imagine that you stand there. Look around you. Overhead, the sky arches above you like a great blue dome. You also see dry, yellow earth. It stretches out in all directions. Far to the north are the snowcapped mountains of Colorado. Over in Utah are rocks with strange shapes. The high flat-topped hills are very odd. Such a hill is called a *mesa* [MAY-suh].

Ages ago, long before man was on the earth, a great shallow sea lay over this region. The sea stretched from the Arctic Ocean to Mexico.

There came a time when forces inside the earth pushed the sea-bottom up above its surface. The water drained away. Volcanoes spat out melted rock over this new land. Then, about sixty millions years ago, earthquakes pushed up part of the earth's surface into high mountains. Since then, rain and snow, wind, heat, and cold have chopped away at the mountains and cliffs. Today we call these the Rocky Mountains.

People came to live in this region long after the sea had pushed up the mountains. People of many cultures came to the region. The region affected them. They affected the region. Today it remains a region of many cultures.

Left: Monument Valley, Arizona

THE EARLY PEOPLE OF THE REGION

The Four Corners Region is one of the most colorful regions for two reasons. First, the landscape is unusual, and second, the people of the region are different because of their different cultures.

The main culture groups in the Four Corners Region are the Navaho, Hopi, Apache, and Ute Indians, the Spanish-Americans, and the Mormons. There are also English-speaking Americans who are not Mormons.

The Indians Arrived First

Historians know that Indians were living in Utah and Arizona 2,000 years ago. These Indians lived in pit houses.

Arizona, Colorado, New Mexico and Utah meet at the Four Corners Monument.



These ancient people made fine baskets. They planted corn, squash, and beans. They stored their food in pottery jars. They did not have to travel

Snowcapped Pike's Peak rises high in the Rocky Mountains.



far to find food. They planted and grew food in one place. This permitted them to settle down. They formed villages.

These Indians built one-story buildings with as many as 16 rooms. Families and their relatives lived in these houses. These Indians used a pit house as a kind of church. In almost every Indian village in this region there is such a place of worship. The Indians today call them *kivas* [KEE-vuhz].

The years from about 1000 to 1300 A.D., historians call the Great Pueblo period. In these years, some Indians built towns. Their houses were three

and four stories tall. The Spanish word for town is *pueblo* [PWEB-loh]. So these Indians are called Pueblo Indians. These Indians also built houses in shallow caves. The caves were high on the sides of the cliffs. These Pueblo Indians were also called cliff dwellers.

After a while, the Pueblo Indians left their cliff dwellings. They left their villages. Why? No one knows. Some historians say there was a long dry period at the end of the 1200s. People had to leave in search of water. Some believe that other fierce Indian tribes drove them out.

An Indian artist made these drawings hundreds of years ago. They show a deer, a snake, and two snails. The artist belonged to the Zuni tribe of the Pueblo Indians. Zunis made their drawings by scraping the walls of nearby cliffs. Rock drawings like this are called *petroglyphs*.



Spruce Tree House, an ancient cliff dwelling near Mesa Verde, Colorado. Pueblo Indians made these buildings out of hard dry clay called *adobe*. Some of the buildings were large enough to hold several families. High on the cliffs, they were safe from attack and from flash floods.



These early Pueblo Indians went to live in other parts of the region. They built new villages in the places we now call Arizona and New Mexico. Their descendants are the Pueblo Indians of today.

The Athabascan Indians came into the Four Corners Region about 1300. Historians believe that these Indians came from northwestern Canada. They speak a language very much like that of certain Indian tribes there.

The Athabascans wandered about as food gatherers and hunters. When they could not find food, they raided the villages of the Pueblo Indians.

After some years, the Athabascans split into groups. One group was the Apaches. They moved south. Another group was the Navahos. They stayed in northern Arizona. They traded with the Pueblos and learned some of their ways such as farming and weaving.

The Spaniards Came for Riches

In the 1500s, a few white men entered this region. They were explorers from Spain, who had been sent by their king. He sent them to find gold.

There were rumors in Europe and in Mexico that in the West there were cities with houses three and four stories high. It was said that people there ate from golden plates. It was said that even the doors were decorated with

jewels. The streets were supposed to be paved with gold. These villages were called the Seven Cities of Cibola.

In 1540, soldiers on horseback poured into the Four Corners Region. A Spanish officer named Coronado led them. They expected to find gold lying in the streets. They were disappointed. Coronado wrote sadly in his journal that he found no golden city. He found only some little towns with streets and houses of mud. When the Spanish explorers did not find treasures, the King of Spain lost most of his interest in this region.

Still, he did send missionaries to persuade the Indians to become Catholics. The Spanish missionaries often treated the Indians cruelly. They were forced to do most of the work.

The King of Spain also sent people to settle the region. The king gave them land, mostly along the Rio Grande.

In 1610, Spanish settlers founded the town of Santa Fe. It became the capital of this province in the Spanish Empire.

The Spanish settlers of New Mexico came from the dry land of Spain. They knew how to farm and ranch in a dry land. They irrigated their farms and raised great herds of cattle and flocks of sheep.

The Indians learned from the Spanish. They realized the importance of raising cattle and sheep. They also saw



the value of using the horse as a means of transportation. So, they raided the Spanish settlements. They carried off horses, cattle, and sheep. They stole so many horses that the Spanish settlers had to get more from Spain. The Spanish settlers, in turn, fought off the Indians and made slaves of those they captured.

More Spaniards came and settled along the Rio Grande. Few Spaniards settled in Arizona or Utah.

The Mormons Came for Religion

In the 1840s, a new group of people entered the region. They were Mor-

mons. They had been driven from the prosperous towns they had built further east. They were driven out by other settlers who did not like their religious beliefs.

The Mormon religion was started by a man named Joseph Smith, Jr., in the spring of 1820, just outside a small village in New York State. Smith went into the woods to pray. There he had a vision. In this vision and in others that followed, he read and translated a message written on some golden plates.

This writing became the *Book of Mormon*. It contains the basic beliefs of the Mormon church. Believers in

this book are called Mormons. They call their church the Church of Jesus Christ of Latter-day Saints. Mormons believe they are more modern saints than those in earlier times.

Mormons once thought that the Indians were part of a lost tribe of Jews who wandered away from the Holy Land long ago. Some Mormons still believe this. The idea has helped Mormons get along well with Indians.

In the 1830s, Joseph Smith and his first followers moved west to form Mormon communities. However, they did not stay long in one place. People chased them out because they didn't like Mormon pride and unity. Mormons thought they were the chosen people of God and said so. They also believed that a man could have more

than one wife. These beliefs angered those who were not Mormons. Finally in June 1844, Joseph Smith and his brother were killed by a mob of people in Carthage, Illinois.

One of Smith's followers was named Brigham Young. This man became the new leader. He decided to take the Mormons west of the Rocky Mountains. Perhaps there, people would leave them alone.

In the midst of winter, the Mormons crossed the Great Plains. In the summer, they crossed the Rocky Mountains and came into Utah. Before them was an alarming sight! A desert land stretched as far as they could see. In the distance was a great lake, with water they soon found to be too salty to drink. The soil was thin. The cli-

Brigham Young and his followers reach the Great Salt Lake of Utah. The settlement they founded there later became Salt Lake City.



mate was uncomfortable. Who could live here?

But Brigham Young said, "This is the place." He realized that no one else would want this land. So perhaps the Mormons would be free to live here and work according to their own ideas.

Mormon Ideas Mormons believe in hard work and healthy living. To conquer the land of their new home, they knew they would have to cooperate to live. The interest of the Mormon community became more important than any one person's interest. Hard work and cooperation helped the Mormons build a new life on desert land.

Mormon Communities Grow Right away, the Mormons began to plant crops. The earth was as hard as concrete. It had to be soaked with water before it could be plowed. Men worked together to design and dig a system of irrigation ditches in this desert land.

Brigham Young knew that the Mormons had to form other Mormon colonies in this region. If they did not, he feared that other white men would come and drive them out again. He sent scouts to find land good enough to farm. He chose the colonists for their trades and skills. Their work was carefully organized. Colonies were founded in Utah, New Mexico, Ari-

zona, California, and Idaho. Most of them did well in this dry land.

By September 1848, Salt Lake City had 423 houses and 1,500 people. There were 10 other settlements nearby. Each settlement was built around a school and a church.

A large part of the land in a settlement was managed by the church. This gave the church control over the ways the colony could earn a living. The church stored and distributed goods from a common storehouse. The church wanted Mormon society to be built on agriculture. It encouraged farm cooperatives, water cooperatives, and business cooperatives. In *cooperatives*, people share in the work and share in the profits.

The new society needed sugar. So the Mormon church built sugar refineries. The sugar beets were produced on church land.

The new society also needed steel. So the church built small iron foundries and smelters in southern Utah.

The Mormon church did not want to look for gold or silver. The church leaders were afraid that the desire for riches would tempt people to give up their simple lives. The church was afraid also that the discovery of gold and silver in Utah would bring in people who were not Mormons. These people had given them trouble before.

THE UNITED STATES INVADES THE REGION

Explorers and Soldiers

Other English-speaking people, however, had also come into the Four Corners Region.

As early as 1806, Lieutenant Zebulon Pike led men into Colorado. They explored parts of the Colorado River and the Rocky Mountains. Pikes Peak is named for Lieutenant Pike. Along with Pike were soldiers and map-makers.

Some years later, Captain John Gunnison also was sent into the Four Corners Region. His job was to find

good routes for a railroad. The railroad went all the way to the Pacific Coast.

In 1869, Major John Powell explored the Grand Canyon and told Congress how the dry lands of the region should best be used.

Almost 25 years before, in 1846, Mexico and the United States had gone to war. The people of Texas, which was then part of Mexico, wished to join the United States. Mexico refused to allow this. So war broke out. Mexico was forced to give up Texas and most of the Four Corners Region.

Railroads and Settlers

By the 1870s, railroads were being built into the West. Now the Western lands were connected directly with the Eastern city markets. Miners could now look for minerals that could be used in Eastern factories.

The railroads also connected the ranching country with big eastern markets. Texas cowboys drove cattle by the thousands to cow towns along the railroad track. Then the cattle were shipped by train to the big Eastern cities.

Early settlers in Colorado. This photograph was taken in 1886.



More and more people came to the Four Corners Region. They came from the South, the Midwest, the Eastern cities, and Europe. In their eagerness for land and minerals and profits, they pushed aside the Indians and Spanish-speaking farmers and ranchers.

The new settlers believed that man should and could conquer nature. And they believed that the law gave them the right to own land and minerals. They did not always know or care that the Indians had lived on the land for hundreds and hundreds of years.

These new settlers had struggled across half the nation to reach their new homes. They fought dry land and hunger in order to build new lives. They believed that owners could do anything they wanted with their hard-won land and property. They believed in every man for himself.

Indians Struggle to Keep Their Lands

When white men first came into the region, the Indians welcomed them. But the white men's actions soon made the Indians grow fearful and angry.

The Pueblo Indians, a farming people, were used to living near Spanish people. But the Navaho Indians lived differently. When the Spanish introduced sheep and horses into the region, the Navahos changed from farming to

raising sheep. White ranchers started grazing their sheep on Indian lands. White men began to fence in the land. They even claimed the right to use the scarce water. The Navahos grew angry. They knew their livelihood was in danger. They began to fight the settlers. The Apaches tried to drive the white people from the region.

The United States government sent soldiers into the region. Forts were built to protect the settlers. The government tried several times to make peace treaties with the Navahos. The white people were angry when each time the Navahos broke the treaties.

Part of the problem was that the Navahos did not have one head chief who could speak for all chiefs and their people. There was not one big Navaho tribe. Navahos were divided into many small family groups, or bands. These bands moved over the land with their herds. When one band, or family group, signed a treaty, it did not mean that all Navahos had agreed to the treaty. The United States government did not understand it. The government only saw that treaties were often broken.

The other part of the problem was that the whites often broke treaties themselves. They would promise to purchase just so much land and no more. But then, the hunger for land

grew, and the whites just took more.

By 1863, the fight between the whites and the Indians had become very dangerous. That year, Colonel Kit Carson marched into the region with 2,000 soldiers. They destroyed Navaho homes, crops, and animals.

Carson captured 7,000 Indians and forced them to march across New Mexico to a camp near Fort Sumner. There they were imprisoned.

Five years later, in 1868, the United States government gave the Navahos three million acres of land. Part of the land was in Arizona and New Mexico. This was to be a Navaho reservation. Indians would live here free and undisturbed. The Indians were released

from Fort Sumner. They returned to their desert homeland.

But the United States government did not always respect the Indian land. Some of the land and watering places were taken away from the Indians. The land was given to railroad companies. These companies were building railroads across the country. They wanted the land on which the rail tracks ran. The government gave the Indians other land in exchange.

For almost one hundred years, the Indians have lived on their reservations. They have tried to keep their old beliefs and tribal ways of life, but it is getting more and more difficult to do so.

LIFE TODAY IN THE FOUR CORNERS REGION

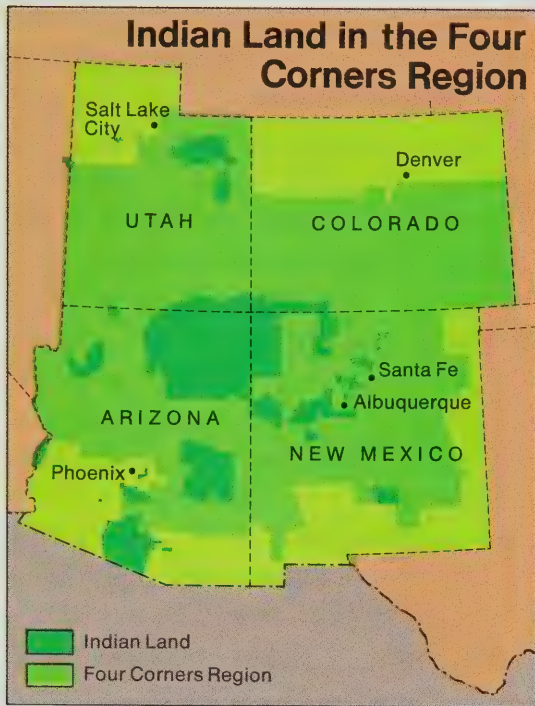
Pueblo Indian Way of Life

Pueblo Indian families are very close. Mother, father, aunts, uncles, and children may live in one house. The oldest man in the house sees that the rules and customs are kept. Pueblo Indians obey and respect their elders.

The mothers' brothers discipline the children. The children are the property

of the mother rather than the father. Children's training begins early. Babies spend their first two years wrapped to a cradleboard. It keeps them from harm. It also teaches them to be patient.

Children are told that they must be good. Otherwise the "bogeyman" will get them. Sometimes men with whips go about the village in ugly masks. This frightens the children into being good.



How Pueblos Are Governed Religious clubs or societies hold the village together. Pueblo Indians believe in several gods. Each god controls an important part of life. The gods control storms, crops, lightning, and forests, among other things.

Everyone belongs to one of the many religious societies in the pueblo. Each society has a special job to do. It is to perform ceremonies that will please the spirits. One society may perform ceremonies to make crops grow. Another may perform ceremonies so that the spirits will send good weather. Another will perform ceremonies to cure the sick.

All the societies try to remain friendly with the spirits. The people fast and pray. They perform dances and songs to please the spirits.

The men perform secret ceremonies inside the kivas. The kivas are religious centers. Every village has at least one.

Everyone must follow the customs of the pueblo or leave.

Pueblo Indians often do not like new ideas. In fact, many of them fight new ideas. For a long time the Pueblo Indians in Taos, New Mexico, refused to allow electricity in their homes. They had no electric light, no television or radio, and no other electric appliances.

Navaho Way of Life

The Navahos are not a village people. They herd sheep. They also do some farming. In winter they live in hogans. These are little houses made of logs and sticks. They are plastered with mud. In summer, they live in camps near the grazing land. These camps may be only a shelter of branches.

The mother is the head of the family. Navaho families are *extended families*. This means that the family contains more than just a mother, a father, and children. An extended family includes the married daughters, their husbands, and their children. It also includes the grandparents.

Today, the Navaho reservation is larger than the states of Connecticut, Massachusetts, Rhode Island, and Vermont, all put together. It is a large, strange land. The wind moans between the tall red rocks. The moon casts strange shadows across the land.

The Navahos believe in mysterious spirits. They call them the Holy People. The Holy People ride on sunbeams. They can travel by lightning and along the rainbow.

The Navahos believe that they were created by the Holy People. They believe these spirits taught them how to live. These spirits gave them corn. They taught them how to get food and how to weave.

The spirits also bring sickness and death. But the Navahos know how to protect themselves. They do the right ceremonies very carefully. In this way they hope to please the gods.

Some Navahos specialize in fighting sickness or trouble. They do this by singing holy songs. A singer may chant songs for three days. His task is to break the evil spell. Singers are highly respected.

Navahos and Ownership The Navahos believe that water, land, and forests belong to nature. No one person can own them. But people may use them. A Navaho may own jewelry and

clothes. He may also own songs. In the family, the women own the sheep and the men own the horses.

The Navahos prize good health and strength above all. Laziness, stinginess, and cruelty are evil. One of the worst sins for a Navaho is to lose his temper.

Navahos Like New Ideas Navahos will gladly borrow a custom if they like it. They do not mind trying part of a new culture. They learned to make pottery from the Pueblo Indians. They also learned how to weave from them. The Pueblos learned how to raise sheep from the Spanish.

Navahos will try out new ideas. They learned how to grow wheat and fruit from the Spanish. They learned how to make silver jewelry and sculpture from the Mexicans.

From the English-speaking Americans, they learned new ways of farming. They learned how to use sewing machines, factory tools, and radios. Some have begun to live in cabins instead of hogans. Some even live in rock houses.

Spanish-American Way of Life

In the mountain villages of New Mexico, there are Spanish-American families who live in villages built around a Catholic church.

Extended families are important to Spanish-Americans as well as to Navahos. But Spanish-Americans also give great importance to the *close family*—the mother, father, and children. The father is the head of the close family. The mother takes care of the home. Sometimes the father dies or becomes ill. Then, the oldest boy becomes head of the close family.

In both kinds of families, children are taught not to fight. They help bring up the smaller children. They also help the old people. In these families, old people are respected.

The children are told to be modest. Boasting is not polite. It is bad manners for one person to try to be better

than others. It is important that each person act as part of a group.

How Villages Are Held Together A village is made up of many extended families. Each is headed by a grandfather. Every member of the family respects and obeys the grandfather. The grandfather speaks for the family in village matters. This gives everyone the feeling of belonging together. It helps people work together in times of need. They must work together at harvest and planting time.

How Villages Are Governed The grandfathers together run the village. They are led by the *head man*. Usually

High in the mountains of New Mexico there are rolling, grassy plains. The Spanish villages are on such land.





Mora (above) is a small village in the mountains of New Mexico. About 400 people live there. Most of them are Spanish-Americans. They are descendants of early Spanish settlers and explorers. The people of Mora still speak Spanish. Mora's old adobe church (below left) is built in the Spanish style. So is the Courthouse (below right).



he is the grandfather of the richest family in the village. He is called the *patron*, or boss. He settles disputes. He hands out jobs. He speaks for the village to the outside world.

The patron is not elected. He is the patron because he is rich and powerful. He keeps the title of patron for life.

The village patron works with the patron for the whole area. The area patron is richer than the village patron. He is more powerful. The village and area patrons control all Spanish-Americans in the area.

In this system, one person has little freedom to speak his ideas. In this system, new ideas and change are not often welcomed. A person has nothing to say about the rules of life. The patrons make the rules. The people must obey them.

Mormon Way of Life

The church is still an important part of Mormon life. It owns mines, banks, insurance companies, and many other businesses. The Mormons support colleges in the region.

Mormons go to church in large numbers. Many of them spend a lot of time doing church work.

There is still a strong cooperative feeling among Mormons. The church plays an important role in helping the needy. The church finances public-

works programs, like irrigation systems. In other regions, public-works programs like these would be financed by the government.

Today, the Mormons are no longer isolated. Movies, television, and radio have brought the outside world into the Mormon communities. They hear new ideas and see different ways.

People who are not Mormons have moved into Mormon areas. This also helps bring some changes to the old Mormon way of life.

No longer do Mormons work only in cooperatives. They now own their own private businesses. No longer are Mormons urged not to enter mining.

The Mormon Church still urges Mormons to have large families. With large families, people often are poor unless part of the family leaves the farm. That is what is happening. Many young Mormons are going to the cities. They go because there isn't enough land to support them. They also go because through television, movies, and radio, they see and hear about opportunities in the cities.

Even when they are outside the region, many Mormons still try to live as much as possible by the rules of the Mormon Church.

Salt Lake City is now the largest city in Utah. This prosperous city has about 200,000 people.

HOW PEOPLE EARN THEIR LIVING

Ranching

This is a land of cowboys and ranches. Most of the land is used as range land for cattle and sheep.

In this dry climate, cattle cannot graze too long in one place. If the grass is eaten too short, the sun burns it. It dies. Erosion wears away the land. Then it is no longer good for grazing.

It takes 50 to 100 acres of this kind of land to feed one cow. To feed a big herd of cattle takes a very big ranch.

Dry Farming

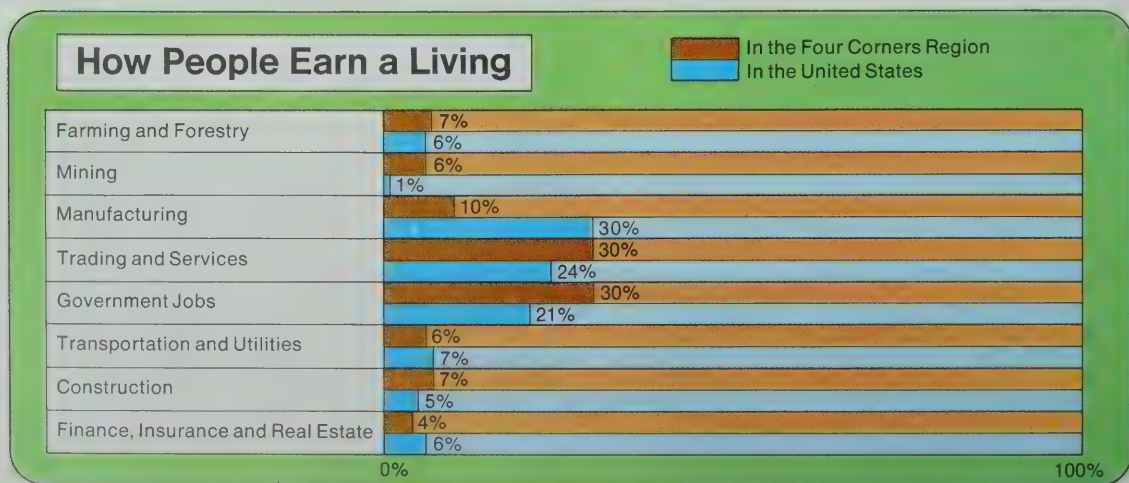
There are two kinds of crop farming in the Four Corners Region: dry farming and irrigation farming.

The idea of dry farming is to save water. Weeds use water, so weeds are kept down. It is important to keep water from running rapidly off the land. So the soil is kept loose and rough. Strips of land are allowed to rest and collect moisture for two years before they are planted again.

Winter wheat is the most important crop that is dry-farmed. It ripens before the weather gets too hot. Oats, barley, range grasses, and pinto beans are important dry-farm crops.

Irrigation Farming

The other kind of crop farming in the region is irrigation farming. In Utah, only a small amount of farmland is irrigated. But three-fourths of the farm-



ing income in the states comes from that small amount of irrigated land. Irrigation increases production greatly.

Some farmers put their savings together to dig irrigation ditches for their farms. The United States government also builds irrigation systems.

The Grand Valley Project near Grand Junction, Colorado, cost \$5 million. It irrigates more than a half million acres. Great quantities of sugar beets, hay, alfalfa, grain, and fruit and vegetables grow on this land.

Farming is still important in the Four Corners Region, yet fewer people farm today. First, small farms are combined into bigger farms. Bigger farms are more productive. Second, machines now do the work. Few farm-workers are needed.

Gold and Silver Prospecting

Today the mining of gold and silver is not as profitable as it was. Gold mining is more complicated today. It costs more to mine gold and silver because the wages of workers have risen. While costs have gone up, the price of gold has been fixed by the government. Many gold mines cannot afford to stay open. It costs more to mine an ounce of gold than the miner can get for it. If the government increases the price of gold, many mines now closed may open again.



A photograph of an old-time gold miner with the tools of his trade. Thousands of men went West to search for gold and silver. Some, like this one, struck it rich. Most did not.

The biggest supplier of gold and silver in the Four Corners Region is Bingham Canyon, in Utah. Gold and silver, along with lead and zinc, are also produced in the region as a by-product of copper.

Copper Mining

The three largest copper-producing areas in the United States are in the Four Corners Region. They are in the states of Arizona, New Mexico, and Utah. One of the largest open-pit copper mines in the world is in Bingham, Utah.

The pure copper is shipped outside the region. There, it is turned into

finished copper goods. The best-paid jobs in the copper industry are located outside the region. They are connected with changing copper into finished goods. Only the low-paying jobs are common in the region.

Uranium Mining

The first great demand for uranium came during World War II. Scientists learned then to use uranium to produce atomic energy.

During a great uranium hunt in the 1950s, many small uranium mines opened. The mines had to sell the uranium ore to the United States government. Then, most of it was processed in the region in government-owned uranium mills.

In 1958, the government decided it had all the uranium it wanted. The boom was over. The small mines closed. Small mining towns became empty.

Today, the demand for uranium is growing again. More uranium is being used for making electric power and for other peaceful uses.

Coal and Iron Mining

Utah produces more iron ore than all the other Western states put together. About half of it is used in Utah to produce steel. The rest is shipped to other places in the United States and to Japan.

Coal is mined in large amounts in northwest New Mexico. It is used in several giant electric plants. Plants send electricity to Los Angeles, Phoenix, Tucson, and Las Vegas.

Oil and Gas Mining

In 1922, oil and gas were discovered in the desert where the four states meet. Many of the oil and gas wells are on the reservations of the Navaho and Ute Indians. The Indians receive money by leasing their land to oil companies.

Manufacturing

The Four Corners Region has little manufacturing. Here are some reasons:

- The population is scattered over a wide area, so there isn't a good market for manufactured goods in the region.
- The transportation system is not very good. The land is rough, and cut with deep canyons. The movement of people and goods is slow between the Four Corners Region and the rest of the country.
- There are not enough of the skilled workers or services necessary for manufacturing. For example, there isn't enough water, sewage disposal, or electricity in the region.

The factories that are in the region are mostly in Provo, Utah; Albuquerque, New Mexico; and Grand Junction, Colorado.

In Provo and Grand Junction, most of the factories process foods. In addition to the large steel mill in Pueblo, Colorado, there is one in Provo, Utah.

In Grand Junction, there are factories that produce electronics and missile parts. There are also some research groups trying to find ways to get oil from nearby oil shale deposits.

In Albuquerque, there are oil refineries and chemical plants. There are also factories producing space and scientific equipment. Much skill is needed in these industries.

In many of these factories of the Four Corners Region, only one or two manufacturing steps are added to the raw materials. Only a little value has been added to these raw materials. Jobs that add only a little value do not pay high wages.

Trading and Other Services

Most of the people in the region have little education and few skills. So, there are few professional people, such as lawyers and doctors. Instead, people in the region take jobs in service industries. These jobs do not always require great technical skill or training. People work in stores, restaurants, and service stations. These jobs usually do not pay high wages.

Government Jobs

The United States and state governments own much of the land in the region. The government workers keep up national parks. They work on Indian reservations. They work on military bases, in atomic laboratories, and at giant dams.

THE PROBLEMS OF POVERTY

The Four Corners Region has some of the poorest people in the United States. There are several causes for the poverty. Some of these causes affect only the minorities in the region.

What are some of the causes of poverty in the Four Corners Region?

- The region has poor soil.
- The lack of rainfall makes the land too dry.
- People leave farms without the skills to get jobs in the city.
- Farm jobs are seasonal. After the harvests, the jobs are over.
- Mining jobs are unsteady. The price of some minerals rises and falls.

When the price is high, mineowners earn a profit. Mines are kept open. The miners have work. But when the price of the minerals falls, many mineowners lose money. Many mines close and miners are out of jobs.

These are the causes of poverty that affect almost everybody in the region. But there is a cause of poverty that affects only Indians and Spanish-speaking Americans.

Minorities Suffer Most

In the Four Corners Region about one out of every three persons is poor because he comes from a culture that is different from the white, English-speaking culture. Many don't speak English. They don't always understand the ways of outsiders.

Most of the businesses belong to English-speaking white people. They often give the best jobs to English-speaking white people. It is difficult for others to get ahead in this business world.

The Price of Cultural Difference

It is painful to live in two cultures. The Indians and Spanish-Americans think in and speak their own languages when they are at home. But if they get good jobs, they must often speak English. At home they are one kind of person.

At work they must be another kind of person.

The young Indian or Spanish-speaking man or woman wants advice from his elders at home. But he cannot get the advice he needs if he works outside his village. The older people do not understand the white man's life. So they do not understand the young people's problems.

The young people then get confused. One young Indian said, "I feel like a half-and-half person. At home I feel half Indian. At work I feel half white."

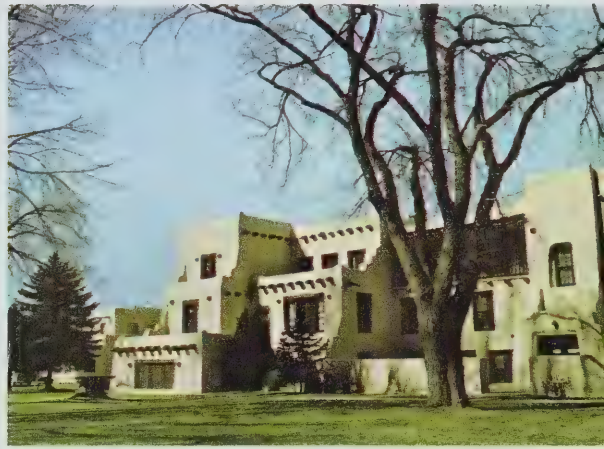
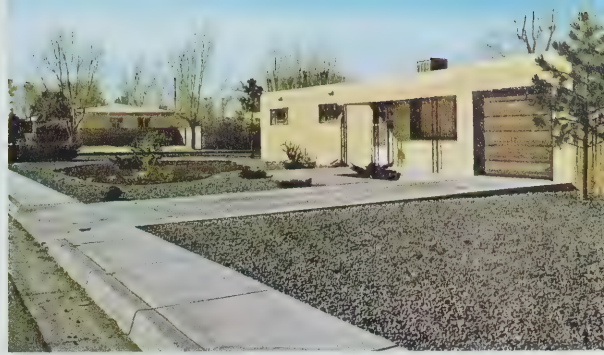
Possible Solutions

The problems of poverty and cultural differences are being studied by experts in business and in government.

Government Planning The governors of the four states in the region formed the Four Corners Regional Commission. The commission and other experts have been studying the causes of difficulty in the region.

New Sources of Income Life is getting much better, even for the Indians who remain on the reservations. Coal, gas, and oil have been found on reservations. They bring income to the tribes.

Indians are also leasing their land to factories, electric-generating plants, and shopping centers. This brings in



Even modern Four Corners cities like Santa Fe and Albuquerque still show the mark of early Spanish settlers. The lamps of a church are Spanish-designed. Many new homes and public buildings look like old Spanish houses. People of Spanish descent are everywhere. Even names of streets or foods may be Spanish.



rent. It also provides jobs for the Indians. The tribal government uses some of the money to give scholarships to young Indians. They go to study in colleges.

White, English-speaking Americans believed for a long time that the United States was a melting pot. They believed that when people came here from all over the world, the first thing they wanted to do was to become exactly like the ruling group. Surely they would accept the customs and the language of the strongest group. That was the English-speaking group.

But it just didn't happen. The Indians and many Spanish-Americans were here first—before English-speaking people. More and more Americans now realize that most people are very proud of their language and their culture. New ways must be found for different cultures to live together.

Blending Cultures The Spanish-Americans and the Indians do not want to give up their languages and their cultures. They want to share the problems and advantages of the modern United States. But they want to do it as Spanish-Americans and as Indians.

Many of the ideas in the minority cultures could be borrowed by the Regional Commission. Today Americans are beginning to wonder if they are

really living the good life. Cities are crowded and noisy. The air is dirty and so is the water of the lakes and rivers. The beautiful countryside is being ruined by more and more highways and parking lots.

The Spanish-Americans and Indians respect nature. They are often content with a slower pace of life. They respect family life and the spirit of cooperation. They are usually more interested in the community than in the individual. These are cultural values that are very important for the future of our country. If the rest of the country could use some of these ideas, it would enrich our culture. It would also help us build a better Four Corners Region and a better country.

Test Yourself

1. What were some of the early culture groups to settle in the Four Corners Region?
2. Explain the difference between an *extended* family and a *close* family.
3. What is the difference between dry farming and irrigation farming? Give examples of each.
4. Why is there so little manufacturing in the Four Corners Region?
5. Name some of the causes of poverty in this region.

MY WORLD



Have you ever run through golden cornfields in the early fall? Have you ever watched the wind carry away the seeds from cattails? If you were my friend, that is how we would play every day after school.

You would call me Ben. That's my nickname. But I have other names. Evangeline is my English name. But my real name is Mahoud Chewiwi. It's an Indian name.



My family and I are Pueblos. We live on the Isleta Indian Reservation in New Mexico. *Pueblo* is the Spanish word for "village." The *pueblo* on our reservation also is called Isleta.

The Spanish came to Isleta long ago. They built the Church of St. Augustine. The adobe building stands bright and tall. You would never guess it was finished in 1613. It is one of the oldest churches in the United States. But Isleta was old long before the Spanish came. My ancestors settled here about 700 years ago.

In some ways, our lives have not changed much in all those years. We still follow many of our old customs. On the reservation, we still speak our own language. We eat some of the same kinds of foods as our ancestors did. Mama could buy ready-made bread from the store. But she would rather make her own good bread from corn flour. It's called flatbread. Our people have always made it that way.



But in some ways our life has changed a lot. We live with new ideas. Every morning, my brother and sister and I catch the bus to school in Los Lunas. Los Lunas is the town nearest the reservation. Our school building is very modern. Probably it is a lot like yours. We speak English there. We learn the same things that you are learning.



Los Lunas also has a bright new shopping center. It has many different stores. Sometimes we meet Mama there when school is out. We help her at the laundry. We go shopping in the stores, too. You can buy almost anything you want there. We usually want candy!

But Los Lunas is only a small town. There aren't many jobs there. To find work, Papa has to go much farther from home. He drives all the way to Albuquerque. Albuquerque is like a different world. It's a real city with wide streets. Hundreds of thousands of people are there, and many tall buildings. Papa helps make the buildings. He's a construction worker.





Papa drives to Albuquerque every day during the winter. But in summer he stays home. He grows corn and chili peppers. I like it when Papa is with us. I wish he could stay here all the year round. Sometimes I think he wishes so, too.

But it seems like people are always leaving the reservation. They go to find good jobs. They go to see other parts of the country. My oldest brother, Bart, went away to the Marines a year ago. My big sister, Frances, left to go to New Mexico Highlands University.

Maybe someday I'll leave too. I'll go away to college. I'll visit some of the big cities I've read about. Those cities are even bigger than Albuquerque. But I know I'll never forget the ways of my people. Isleta will always be my home.



WHAT DID YOU LEARN?

1. In this unit you have read about people from several culture groups. Some of those people were born into one culture group but live and work within another.

What special problems do you think people have when they try to belong to two cultures?

2. Most minority groups have suffered from prejudice in this country. Think about the minority groups you have read about in this unit. Then try to answer the following questions:

- a) What types of prejudice have they suffered?
- b) Why do you think people have treated them differently?
- c) How do you think this affects the region where they live?

3. What natural features of the Southern Region have helped man in his work there?

4. What natural features of the Four Corners Region have limited man's work there?

5. You have read about many kinds of workers in this unit: slaves, indentured servants, tenant farmers, sharecroppers, and migrant workers. Read each of the statements below and try to decide which type of worker might have made each comment.

- a) I know we need to repair the roof this year, but there won't be enough money left over after we pay our rent.
- b) After we finish here, let's head northwest to Washington. With luck we should get there in time to help pick the apples.
- c) The cotton should bring a pretty good price this year. If only we could sell our entire harvest.
- d) We received a monthly allowance of food and a yearly allowance of clothing. It was never enough, but we were afraid to complain.
- e) The work is hard and the hours are long. But, in a few years I'll be free to do anything I want.





Unit Four

REGIONS MADE BY GOVERNMENT

The United States is made up of fifty states. Each state may be called a region. A region is an area that has something in common. The common thing in each state is its government. The government and the people make up the political system of a state. The state, therefore, is a political region.

The political system of the state can affect its well-being in many ways: the way it collects taxes, the way it spends taxes, the kind of laws it makes. All these actions of the government affect the life of people in the political region.

Left: The 1968 Democratic National Convention



Chapter 8

California: Region of the Future

California! Just the sound of that name can make men dream.

For 400 years, men have been drawn to this rich and beautiful region. It has snow-topped mountains and sandy shores. It has forests of giant redwoods and sequoias [si-KWOI-uhz], the largest and oldest trees in America.

Its soil is rich. All sorts of vegetables grow there. Its lemons, oranges, and grapes are famous the world over. Underground are its minerals—gold, silver, and oil.

California is a symbol of promise and opportunity. Today, its population is 40 times greater than it was in 1860. If the whole country had grown as fast as California, the United States would have half the world's population.

The people in the state are different from one another. Their interests vary. States like this must have a strong and wise government to balance the needs and wishes of different people.

Life moves so fast in California that many people believe that what this state does now, other states will do later. They look to California as a model for the political region of the future.

Left: California State Assembly in session

THE EARLY CALIFORNIANS

The first strangers to arrive in California were the Spaniards. The native Indians saw them march in from Mexico in 1540. This was almost a hundred years before the Pilgrims landed in New England.

Spanish California

The early Spanish settlements were located around San Gabriel. The Spaniards did not try to farm much. They were most interested in taking gold and silver from the Indians.

The settlements grew slowly. There was little trading and farming. There was no industry. Because Russia owned Alaska, the Spaniards feared attack from her. Little was done to develop the area.

Strangers were unwelcome in Spanish-California. The leaders did not want the people to meet others with different ideas. They were cut off from the outside world by nature, too. The Pacific Ocean was on the west, and the deserts and mountains on the east. Isolation prevented growth.

Change came by 1800. Traders from Boston sailed to the Pacific Northwest to hunt seal and otter for their skins. They had to sail around the tip of South America. By the time they reached California, they had to stop for supplies.

Even though their leaders did not approve, many Spanish settlers welcomed the traders. They smuggled leather to the Boston traders. In return, they got shoes and other finished goods.

The New Englanders brought back stories of the beautiful, but empty, land they had seen.

In 1821, Mexico became independent from Spain. Then people in the United States became more interested in the California part of Mexico. Businessmen wanted to start new businesses there.

In the 1820s, men crossed the Rockies and the Sierras to reach California. They were hunters, trappers, and fur traders. They lived alone in the mountains. They came to town only long enough to trade in furs.

These mountain men were not settlers. They founded no towns. They cleared no land. They raised no crops. But these brave wanderers did make the trails to California. They led the way for thousands to follow.

Families began to think about moving to California. In the 1840s, many of them left the farms their parents had started in the East and Midwest. They packed their household goods in wagons. Their covered wagons bumped along toward the land of promise.

These people were the first wave of a new kind of immigrant to California. They did not come for adventure or riches. They did not come for fur and hides. They came to make homes. They came to raise their families. They came to stay.

The Mexican War

During the time of this migration, the Mexican War took place. In 1846, the United States declared war on Mexico because both claimed a land area on the Texas-Mexico border. The people of California asked the United States government for protection. United States soldiers were sent there to help fight the Mexicans.

The war lasted a little over a year and ended with Mexico's defeat. Soon after it had started, American settlers in California tried to break away from Mexico. They declared that California was a new republic. They joined with American soldiers to fight Mexico.

When the war was over, Mexico agreed to give up claim to California and other western lands. In return, the United States paid \$15 million to Mexico. Then the people in the Republic of California were happy to join the United States. In 1850, California became the thirty-first state in the Union.

Meanwhile, an important event happened that changed the whole future of California. Gold was discovered!



The Gold Rush

One winter day in 1849, James Marshall was building a sawmill on a river in the Sierra Nevada mountains. He was about 40 miles northeast of Sacramento. On the sandy riverbanks, he found nuggets of gold. Word spread quickly. Gold! Gold in California!

It was like water bursting through a dam. In 1849, a flood of new migrants poured over the mountains. They were called the forty-niners. They raced by the thousands to seek gold in the streams and mines of California. The gold rush was on!

The forty-niners were different from the migrants who had come before. They were mostly young men. Few had wives or children. They hoped to make their fortunes overnight digging for gold. They did not want to farm. They did not want to settle down. They wanted gold!

Thousands of people came rushing to California to get rich. In 1849, the population was about 15,000. Four years later, it was 260,000. In 1882, \$200 million worth of gold was mined there. This was more than people ever mined in one year before or since. Yet, few people became rich. Looking for

Forty-niners look for gold in California. One man digs with a pick-axe. Another sloshes water and sand in a pan. The water washed away the lighter sand. Heavy gold dust stayed in the pan. This was *placer mining*. The man at right uses a trough for placer mining.



gold is hard, dirty work. And gold is seldom found. Many of the gold hunters went home poorer than when they came.

Those who stayed sent for friends and families to join them. Entire families moved west. They were not looking for quick fortunes. They wanted to settle down. During the 1850s and 1860s, many of them settled in the sunny fertile valleys of southern California.

The gold rush brought people to California. They built an economic base for future growth. And about this time a new invention helped California grow even more.

The Iron Horse

In 1869, the first railroad was built across the United States. From the east came the Union Pacific Railroad. From the west came the Central Pacific. Their tracks met in the little town of Promontory, Utah. A golden spike was driven into the track to mark the place where the railroads joined.

Steel tracks had crossed the mountains and deserts. From now on people could move safely from the East to the West. Supplies could come to California from the East, and California products could go to Eastern markets.

SECRETS OF CALIFORNIA'S SUCCESS

People

A region needs people. People do the work and buy the products of its farms and factories. California has plenty of people.

Natural Resources

California has plenty of natural resources. Rich soil, thick forests, and minerals cover much of the state. Its inland waters and the sea off its coasts have plenty of fish. It also has a sunny, mild climate.

Transportation

California's products must be sent to other regions. Products from elsewhere must be brought in. California has highways, railroads, and seaports.

Entrepreneurs

Entrepreneurs are people who risk their savings to start a business. They risk borrowing the savings of others. They take the risk because they see the promise of making better income. California has many of them.

Power

California's chief source of power is oil. Oil was discovered in the 1890s. But another source of energy was not discovered until later.

A by-product of oil is natural gas. At first, men did not know it was valuable. But by 1910, they discovered ways of using it. Natural gas became an important source of power in the state.

Water

California's farmers irrigated the soil. They brought water to the fields from distant rivers. By 1913, Los Angeles had completed an aqueduct which brought water from far away in the High Sierra Mountains.

Good Leaders

California had more than economic resources. It had the benefit of good political leaders in the early 1900s. These leaders belonged to a nationwide group, called Progressives. Theodore Roosevelt was the most famous member of the national group.

The Progressives wanted to see political regions progress. They wanted progress toward a stronger democracy. They wanted the individual voter to have influence on the government. To do this, they had to fight the big corporations.

In California, a great deal of political power was held by the giant Southern Pacific Railroad Company. Hiram Johnson was governor of California from 1911 to 1917. He belonged to the Progressive party. During his term of office, the state enacted many progressive laws. A state railroad commission was set up to regulate the Southern Pacific's prices.

The Progressives also passed laws to help working people. These laws included compensation for a worker when out of work or injured. They also included the eight-hour day for women and restrictions on child labor.

While Johnson was governor of California, the state had an efficient government, free from corruption. The influence of the Progressives on the politics of California has lasted a long time. It is one of the reasons that the state has been a leader among political regions.

Hollywood

During the 1920s, the movie industry made California famous. This growing industry advertised the state to the rest of the nation. People saw actors and actresses on sunny California beaches. They saw them swimming in California's waters. Movies spread the dream of this golden land all over the country—and the world.



A Hollywood film crew in 1922. In those days, movies had no sound and no color. Cameras were cranked by hand. The action looked fast and jerky. But people all over the world loved Hollywood movies.

A sunny climate made it possible to make movies almost every day of the year. And southern California had all the settings a film producer could want—mountains, deserts, and farmland. There was the Pacific Ocean for sea stories. There were large cities and country towns. There was canyon country for westerns.

The film industry influenced American life through movies. The cars, clothing, and furniture shown on the screen were copied. Movie stars became heroes and heroines to millions of peo-

ple. Cartoon characters like Mickey Mouse and Donald Duck became friends of children everywhere.

The nation's young people flocked to California. They wanted to be in the movies. Only a few made good—by luck or by hard work. Many of the rest stayed on in California and built homes there. Middle-aged people came to make good business investments in the growing area. Old people came to retire in a pleasant climate. California seemed to have something for all ages. Every year, more people came.

THE NEW MIGRATIONS

During the Great Depression of the 1930s, new migrants came to California. They did not come because they were young and full of hope. They came because they were poor and desperate. They were looking for food. These people were called *Okies*, because many of them came from Oklahoma.

The Okies

A series of dry, hot summers had wiped out their crops. Large areas of the Southwest were covered with a choking cloud of windblown dust. John Steinbeck, in his book, *The Grapes of Wrath*, described it:

The dawn came but no day. In the gray sky a red sun appeared, a dim red circle that gave a little light, like dusk; and as that day advanced, the dusk slipped back toward darkness, and the wind cried and whimpered over the fallen corn.

Men and women huddled in their houses, and they tied handkerchiefs over their noses when they went out, and wore goggles to protect their eyes. . . . All day the dust sifted down from the sky. The next day it sifted down, and an even blanket covered the earth. It settled on the corn, piled up on the tops of the fence posts, piled up on the wires; it settled on roofs, blanketed the weeds and trees.

The farmers had to leave their land. They bought old battered cars and trucks. They piled all they could into them—sofas, chairs, sewing machines, and washtubs. They packed their clothes into gunnysacks and mattresses. They formed a procession on the highways and set off for California.

So another wave of migrants came to the promised land. But they came at the worst possible time. Many people were out of work. The Okies had to compete for jobs with people who had more education and training. Most of them worked as unskilled farm laborers. Most of them lived at the edge of starvation, just as they had back home. Some wandered from farm to farm harvesting crops. Their children were sickly and poorly clothed. Few went to school.

For these people, California was not a land of promise. But it was better than struggling along on their dust-choked farms. The Okies kept on coming to California.

Defense Workers and Servicemen

In 1941, World War II began for the United States. California already had airplane factories. The warm dry climate made the state a good place for

companies to build and test planes. Other companies began to build warships. To supply these manufacturers, more factories were built. All of them produced goods mostly for wartime purposes. Their customer was the United States government. Thus, the government aided the growth of the state during the war.

Thousands of people migrated to California to work in defense industries. The Okies finally found good-paying jobs in factories. They began to build new lives. California industry now employed three times as many people as it had before the war.

The war brought other Americans to California. Training camps for soldiers and sailors sprang up all over the state. Many servicemen thought about settling down there after the war.

Aerospace Workers

In 1945, World War II ended. The growth of California continued. The aerospace industry boomed.

The industry is made up of four different kinds of manufacturing. One part of the industry makes the bodies and engines of planes. Another makes instruments and electrical equipment. Another makes weapons for military planes. Another makes parts for the space program.

All of them depend upon each other. They all need trained scientists and

engineers. They must work together. They need to be located near each other to save time and money.

Why did the aerospace industry boom in California? The state had the skilled manpower developed during the war. It had the schools and universities to train scientists and engineers. The managers of scientific industries knew each other and knew the government agencies that bought the defense products. Besides, most of the skilled workers liked the land and climate of southern California.

The aerospace industry brought businesses to California. They are specialized companies. One company, for example, specializes in very hard metals. Another specializes in plastics. Still another specializes in clay products called *ceramics*. Another produces space capsules.

All these industries depend on one another. If one does well, they all do well. If one does badly, they all do badly.

This group of industries in California has a problem. They have only one big customer—the federal government. When the government spends lots of money on aerospace, the group does well. When it doesn't, the group suffers. It has no other big customer.

When these industries suffer, thousands of people who work in them also suffer. They no longer have jobs. In the

early 1970s, the government cut its military spending. The cutback in military spending meant a loss of many jobs in the aerospace industry.

Most people believe that the aerospace industry will become healthy again in time. After all, airplane travel is a part of daily life. People travel on planes for both business and pleasure. Most people also believe that the United States will not stop its space exploration. All sorts of spacecraft will be needed. The aerospace industry will help make the spacecraft.

Think Tanks

Think tanks are idea factories. California has several of these unusual corporations. They do not produce products. They produce ideas.

The workers at the think tanks are specialists in many fields. They work in the idea factories for a few years. Then they return to universities or to government service to apply new ideas in their jobs.

The first idea factory was the RAND Corporation, in Santa Monica. People at RAND try to answer questions like these: How can the United States best defend itself? How can the nation best use atomic power? How can our nation best talk with other nations?

Another idea factory is located in Santa Barbara. People here try to answer questions about democracy: How can we improve democracy? How can we give the best education to the most people? How democratic can the whole nation become?

THE POLITICAL SYSTEM IN CALIFORNIA

California is the third largest state in area of all the United States. It ranks first in population. It has many different subregions.

People living in subregions have different needs and wishes. But since all subregions make up one political region, the government of California must try to meet all their political de-

mands. Doing this often causes trouble. By meeting the demands of one subregion, the government can cause another subregion to suffer.

The state has three major subregions: the northern and eastern mountains and plateaus; the farming area of the Central Valley; the urban region along the coast.



A big lettuce farm in the Central Valley. About one out of every four vegetables grown in the United States comes from California.

A Varied Population

California attracts many kinds of people. The state is an interesting mixture of people—whites, blacks, Mexican-Americans, Orientals. Some are rich; others are poor. Some are young; others are old.

Half of them were born in some other state. They moved to California to better their lives. Many have done so. The average income is higher than elsewhere in the nation.

Most Californians are better educated than many Americans. In 1960, the average Californian over 25 had been to school for at least 12 years. There are more college students in California than in any other state.

Californians have developed their own way of life. They are more informal than people in other parts of the country. They like to spend much

of their lives outdoors. They are adventurous and independent. They represent many different viewpoints and many different interests.

How Wishes Come True — Sometimes

The political process is like a big system made up of many parts acting on one another. The political system has goals. The goals are the needs and wishes of the people.

The individuals in a political system make their wishes known in different ways. One way is to inform their elected lawmakers in the state legislature. Another way to turn wishes into demands is to join a group of people who share the same goal. This is called a *special-interest group*.

A group can attract more attention than one voter can. A group can advertise its wishes in newspapers or on



television and radio. A group can march in the streets or picket a government building.

Many special-interest groups exist. One group may want cleaner air. Another may want cheaper cars. Another may want more public parks.

Some people belong to several different groups. A man who loves animals may want a law against killing bears. On the other hand, he may like roast duck. He wants a longer hunting season for ducks. So he joins two different special-interest groups.

The lawmakers in the legislature watch the groups carefully. They know that the groups represent many voters. If they do not pay attention to these demands, they may not be reelected.

Interest groups often have conflicts. In California, there is a big conflict over the use of land. Some people want to preserve the open spaces. This group includes homeowners and conservationists. Another group wants to turn open land into residential and industrial

areas. This group includes land developers and businessmen.

Pioneering in New Laws

Demands of the people are presented to the state legislature in the form of bills. For many years, California has led other states in passing new laws and programs.

It was the first state to provide community health services. Old people no longer have to go to strange hospitals far from home.

It was first to have convicted criminals sentenced by a group of people, instead of by a judge. These people are called *adult authorities*.

It was the first state to have free tuition for its colleges and universities. It was the first state to require anti-pollution devices on new cars.

It was the first state to outlaw discrimination when selling or renting houses. People could not refuse to rent or sell houses because of a person's race, color, or religion.



These laws and programs offer more freedom and opportunity for all people. But sometimes they have not succeeded.

For example, Californians found that the adult review board gave prisoners more unfair sentences than the strictest judges. Still people continue to experiment with new and daring ideas.

Benefits of Taxation

A political system does not just pass laws and regulations. It also provides goods and services for the people. These include education, highways, recreational areas, unemployment compensation, and welfare benefits for the poor.

People support the system by paying taxes. Taxes help pay for public services. But California, like many other states, is having trouble collecting enough tax dollars. The need for public services is rising. But taxes are not rising enough to pay for them. People want public services, but they are slow to vote for an increase in taxes.

The State Constitution

California's political system is considered one of the best in the world. It is known for its honesty, efficiency, and modern methods. The workings of the political system are based on the state constitution.

California's constitution was written in 1879. It is a very long one. It is five times longer than the federal Constitution. It is the third longest of all the state constitutions. Why?

It was written at a time when working men were fighting for more rights and power. They were forming different interest groups with various demands. The lawmakers wanted to make sure that the constitution included the needs and wishes of as many interest groups as possible.

Limits on State Power The federal Constitution declares the actions a state cannot take. States cannot raise armies, make treaties or make agreements with

foreign countries. They cannot print money or set up post offices. Only the federal government can do so.

Duties of States The federal Constitution indicates that the states must take certain actions. They must respect the laws of other states. They must return any criminals who escape from other states.

Powers of States Only There are actions that only the states can take. States have the right to make rules for holding state elections. Only states can establish local governments for cities and towns. Only a state can control trade within its boundaries.

States have much independence. The Tenth Amendment of the federal Constitution says that the powers not granted to the federal government or forbidden to the states are given to the states.

What Is in the State Constitution?

The constitution sets up the organization of the state government. It identifies the officials, gives their duties, and describes how they will be chosen or elected. The constitution also declares the basic principles or ideas that the government is based on. These principles reflect the beliefs and ideals of the people in the state.

The federal Constitution deals in general ideas. It guarantees people the rights of free speech and freedom of religious belief. It guarantees them a fair trial and the right to protest against their government.

State constitutions go into more details. For example, the California constitution says that lawmakers shall be paid no more than five cents a mile when they travel on government business. It says also that when livestock is killed to prevent the spread of disease, the owners must be paid for their losses.

Many people think that the California constitution is too long and too detailed. State officials often are not sure what they can and cannot do. Judges spend a lot of time deciding exactly what the state constitution means.

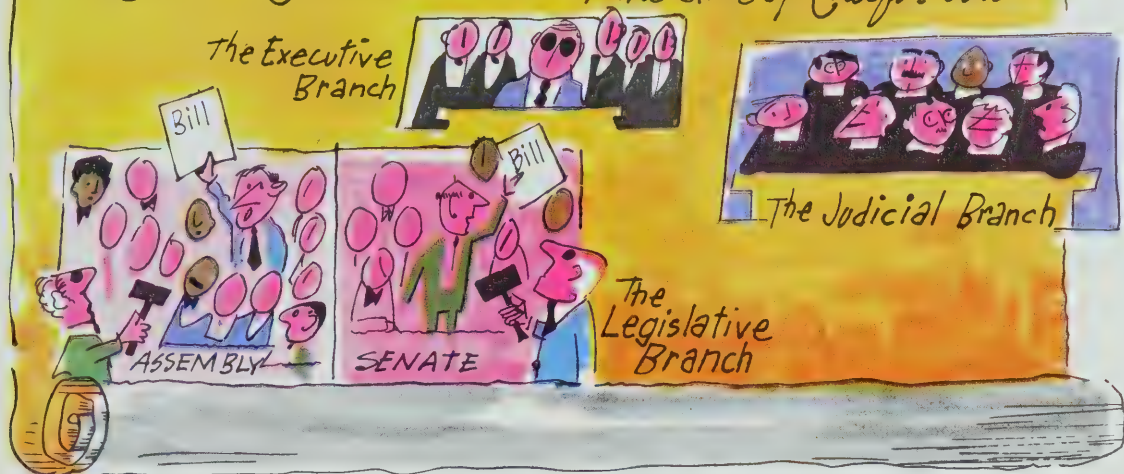
The California constitution has been changed or amended many times. Some people want to make one big amendment. They want to make the constitution shorter and have it contain only basic principles. They want it to be more like the federal Constitution.

The Government at Work

The constitution of California provides for three branches of government. They are all of equal power. No one branch can boss the other two.

The legislative branch makes the laws. The executive branch enforces

The Constitution of the State of California



them. The judicial branch sees that the laws do not harm people's rights.

Executive Branch This branch includes the governor, the lieutenant governor, the secretary of state, the treasurer, and other important officials. The officials are elected for terms of four years. They can be reelected as often as enough people vote for them.

Legislative Branch The legislature is made up of lawmakers who sit in one of two houses. One house is the Senate. The other is the Assembly.

Senators sit in the Senate. There are 40 of them, elected to four-year terms. Assemblymen sit in the Assembly. There are 80 of them, elected for two-year terms.

In the legislature, the wishes of the people are presented in the form of bills. A typical bill is discussed by the assemblymen. Then it is passed to the Senate. Again it is discussed.

If the Senate and the Assembly pass a bill, it then goes to the governor for signing. If he signs, it becomes a law.

Sometimes, however, the governor may not like the bill. Then he may *veto* it (refuse to sign it). It is returned to the legislature. It may be passed over his veto by two-thirds of the senators and assemblymen voting for it.

Californians do not need to wait for the legislature to pass bills. They can pass bills themselves. The constitution gives them the right of *initiative* [i-NISH-ee-uh-tive]. That is, they can *initiate*, or make up, bills themselves.

If at least five out of every hundred voters in the state sign in favor of a measure, it is voted on in the next election. If at least one-half of the voters approve, then the bill becomes law.

Californians also have the right to try to stop new laws. If at least five out of every hundred voters sign a protest, the new law does not go into effect right away. First the people must vote on it. The right to do so is called *referendum* [REF-uh-REN-dum] because the bill is *referred*, or sent back, to the people. If the people vote for the bill, it becomes law. If not, it doesn't.

Judicial Branch This branch includes the courts. The highest court in the state is the California Supreme Court. It is made up of a chief justice and six other justices.

Beneath the Supreme Court are many other courts. There are 58 counties in the state, and each has a court. Towns of 40,000 people or more have a municipal or city court. Towns with less than 40,000 people have what is called a *justice court*.

When the lower courts disagree about a case, the Supreme Court gives the final decision. Sometimes a person may believe he has been treated unfairly by a lower court. He may have been found guilty when he knows he is innocent. He has the right to take his case to the Supreme Court.

Four Major Conflicts

People in the state do not always agree on how its resources should be used. Many conflicts occur between the subregions. Following are a few of them which the state government at Sacramento must try to solve.

Conflict over Land Use Homes in the suburbs need space for patios, flower gardens, and swimming pools. But the land surrounding urban areas is rich agricultural land. Farmers want it for truck gardens and orange groves. As the suburbs push outward, however, more and more farmers must sell their land to builders.

The price of land is based on how it is used. Farmland in California sells for \$2,000 to \$6,000 an acre. Land on the outskirts of a city may sell for as much as \$20,000 an acre. This land is not for farming. It is for building suburbs.

City planners have tried to protect the farmland. One idea is to maintain strips of land between the suburbs and the farms. This land is not to be developed. The plan is called *green-belt zoning*. This kind of planning has not stopped suburban growth. But it has slowed it down.

The competition for land will go on. Both the suburbanites and the farmers must have land.

Conflict over Recreation Areas Northern and southern California are like two different worlds. The north has beautiful wilderness areas. There are rugged mountains and fresh cold streams. The south has booming growing cities. People in the south like to go north to fish and hunt. They like to relax in the rural atmosphere.

So many people come north, however, that some people are afraid the northern landscape will be ruined. They fear that mountain streams will become polluted. Mountain trails are often littered with cans, bottles, and paper.

Those in the north depend on tourists for a large part of their income. Still, they do not want to see tourists ruin the natural beauty of the land.

Conflict over Water Use The north has few people and a lot of water. The south has a lot of people and little water. The south needs water from the north. The farmlands also need it.

For more than fifty years, water has been brought down from the mountains to the cities and the farms. It has been piped from the mountain rivers and from the snows of the High Sierras. Great dams have been built.

Now more water is needed. Many coastal cities have polluted water. Water from wells has more and more salt and minerals in it. Plans have been made to bring even more mountain



Freeways meet like tangled ribbons in Los Angeles. Some people think that there are already too many cars and freeways here.

water to the cities. The plans call for new dams and new pipelines to be built.

People in the north do not like this. They are afraid that their wilderness area will be spoiled. The dams will cause the lower valleys of the mountain rivers to dry up. They will turn the free, rushing, cold mountain rivers into a series of controlled lakes and ponds. In dry seasons, great areas around the shores of these lakes will turn into smelly mud flats.

The people of the mountain regions treasure their land. The future plant and animal life of the mountains depends on leaving the land alone. If the waters are trapped, plant and animal life will change.

People in the north suggest that water be taken from the ocean. Plants could be built to take the salt out of seawater. This solution, however, may cause another problem. How will all the salt be used and stored?

Conflict over Roads and Highways

The fourth great conflict concerns roads and highways. City people want most of the highway tax money to be spent for freeways in and around cities. This is where the great traffic problems are, they say.

The people of the agricultural and mountain regions disagree. They claim it is wasteful to build more freeways in the cities. Freeways will not solve traffic problems. Cities must improve methods of moving people around by using new systems of public transportation, like high-speed trains.

The lumbermen, sheepherders, and miners of the north and east want new roads. Roads would cut the cost of shipping their products to market. The farmers of the Central Valley want roads from the farms to market towns for the same reason.

The conflict over the roads and highways will go on for a long time.

CALIFORNIA'S TOMORROW

What happens to California will probably happen to other states soon after. How California solves its problems will be a guide for other states with the same problems. These are the questions that Californians must answer:

- How can industries grow without making our cities ugly?
- How can we conserve green countryside and fresh air?
- How can we keep people from feeling too crowded?

Overcrowding

In 1970, California had a population of over 20 million people. In 1971, about 3 million people left California. Still some experts say that in 10 years California may have 28 million people. All of them will need houses and jobs. There must be industries to provide jobs. There must be stores to sell goods. There must be a transportation system.

If everyone who lived in Los Angeles decided on the same day to visit the closest beach, each person would have only 4 inches of beach. In 20 years, if people still keep coming to California, at the same rate, they would have only 2 inches of beach. Happily, not everyone goes to the beach at the same time. But what will life be like when people seem to be everywhere? How will it feel when a person cannot get away from crowds and buildings?

Pollution

Industrial growth makes life more fun. It provides cheaper and better goods than people have ever had before. But what good is it to have expensive fishing tackle if the rivers get too polluted for fish to live there? What good is it to have two or three shiny cars, but no fresh air to breathe?

California—and other states—will have to find a way to get the best bene-

fits from industrialization. At the same time, they must also find ways of cutting down the damage industrialization can do to our land and health.

An Example for All

Californians are willing to try new ideas. They are not tied to the old ways of doing things. But often the new ideas create new problems. Still, the forward-looking government of California has solved many of them. Other states can learn from California's experience. This is what makes California worth watching. How California solves its problems may be an example for the rest of the United States to follow.

Test Yourself

1. Name some of the reasons why early settlements in California grew slowly.
2. What natural resources does California have which have helped it to prosper?
3. What are some of the main reasons why California has attracted such a large population?
4. How did the federal government contribute to the growth of California during World War II?
5. How does an idea factory differ from other factories you have read about?

MANY STATES IN ONE

In 1950, about 10½ million people lived in California. Today, the population of California has almost doubled. At one time, more than a thousand people moved there every day!

Why so many people like California?

One thing is the climate. In southern California, the weather is warm and sunny most of the year. In northern California, it is cooler, but dry and pleasant.

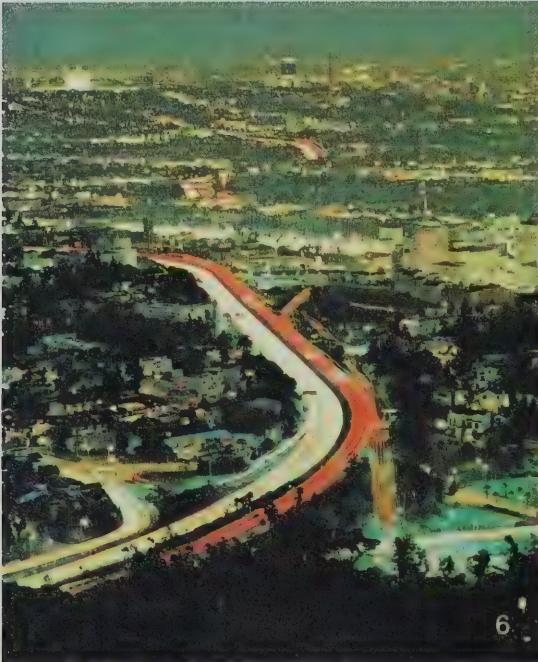
Another attraction is the land. Living in California is like living in many different states at once. If you like forests, mountains and waterfalls, there are places like Yosemite National Park (1). If you like the seashore, there are hundreds of miles of golden beaches (2). There are beautiful lakes and wide deserts. There are rolling green hills (3) and broad river valleys covered with farmland.





California's cities attract people too. San Francisco is one of the most beautiful cities in the world. It is famous for its steep hills and cable cars (4). Many tourists also visit San Francisco's Chinatown (5). More Chinese people live there than in any city outside the Orient.

Many people think that big cities in the future will look like Los Angeles (6). This huge city sprawls across 455 square miles of land. It is made up of 64 smaller communities. These communities were once separate cities. But Los Angeles swallowed them up. One of these communities is Hollywood. It is the center of the movie industry.



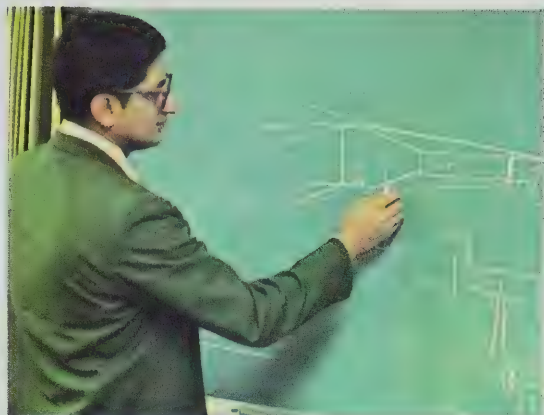
Nearby is Anaheim, the home of Disneyland (7). Disneyland is named for Walt Disney. He made movies about cartoon characters like Mickey Mouse and Donald Duck. Thousands of visitors see Disneyland each year.

The people of California are proud of their schools. California has the largest public school system in the United States. The University of California at Berkeley is one of the best universities in the country.



Californians study and do research outside of school, too. There are "think tanks" like the famous RAND Corporation. Here, scientists and other specialists search for new ideas. They search for new ways of solving problems.

Other scientists, like this physicist (8), put tomorrow's ideas to use today. The physicist works for the North American Rockwell Corporation. This company builds large liquid rocket engines (9) for the United States' space program.



Young people especially enjoy California. Here, they can spend a lot of time out-of-doors. They like to swim, surf, and ride dune buggies in the desert (10). They like to listen to the rock music for which California is famous.

No wonder California has more young people than any other state!





Chapter 9

Alaska: Frontier Region

Some regions have areas in them that no human foot has ever touched. These are often beautiful and mysterious places. Man knows little about them.

These regions have few cities and few comforts. But some are rich in natural resources. These regions are called frontier regions. Alaska is a cold frontier region.

It became a state in 1959. It is the largest state, and it is separated from the rest of the United States by 500 miles of Canadian land.

One-third of Alaska's land lies above the Arctic Circle. The ground here is frozen solid for perhaps 50 feet down.

Since the ground is frozen, no trees grow here. The land cannot be farmed. It is difficult to build buildings here.

In winter, the land seems as dead as the moon. The sun barely gets above the horizon in winter. The temperature falls to seventy degrees below zero.

But in summer, the land comes alive with brightly colored flowers. The daylight is twenty-four hours long! Lands like this are called "lands of the midnight sun."

How has statehood changed "the land of the midnight sun"? It has brought Alaskans new rights, new laws, and new responsibilities. People in Alaska have many different interests. Some groups have taken political action to protect their interests. The state must govern wisely to serve the needs of all Alaskans and to build a stronger state.

Left: Arctic region, Alaska

HISTORY OF ALASKA

For hundreds of years few people bothered about Alaska. It just slept under its blanket of ice and snow.

White Men Arrive

In 1741, Vitus Bering landed on the coast of Alaska. He was a Danish captain in the Russian navy. The Bering Strait was named for him. He took back to Russia stories of a land where thousands of seal, walrus, otter, and other animals lived. The Russians thought that they could make a lot of money selling Alaskan furs.

Russian fur traders moved into Alaska. They were greedy men. Their only interest was in getting money for the furs. They did not care about the country or the few people who lived there.

The Natives Suffer

The Russians found Eskimos along the west coast which faces the cold Bering Strait. They also found the Aleuts, cousins of the Eskimos. The Aleuts lived on the Aleutian Islands, which string out from the mainland of Alaska. Along the southern and southeastern coast, they found Indians.

The Aleutian Islands were closest to Siberia. So the Aleuts were the first

people the Russians met. The Aleuts were a peaceful, gentle people. They did not know how to deal with the fierce and greedy Russian trappers and traders. The Russians killed thousands of them. They made many more slaves.

The Eskimos were spared some of these hardships. Few trappers came to their distant areas.

The Indians fought the Russians, but still they fell victim to them and suffered great hardships. The Russians brought diseases that the Indians and Eskimos had never had before. Thousands died of tuberculosis, smallpox, and measles.

For more than 100 years, the Russians hunted fur in Alaska. They always treated the natives badly.

American whaling ships followed whales from the Pacific to the Bering Sea. The ships began stopping at little ports on the Alaskan coast. The Americans also brought diseases to Alaska. And they brought whisky, guns, and gunpowder. Thus the white men changed the lives of the Alaskan natives.

Before the white man came, the natives knew their land and how to live on it. The Eskimos lived in the coldest and most barren part. But their igloos

of snow, and their parkas, were perfect for the climate. They also had the right kind of tools for hunting and fishing. Their kayaks, sleds, and snowshoes helped them move easily from place to place.

The Aleuts lived closer to the sea. They knew how to live off the sea and the little food that was found on their windy and rainy islands.

The Indians knew how to take their food from the sea. They knew how to trap animals for food and clothes.

The natives understood the land and its climate. They understood the habits of the fish and the animals. They orga-

nized their lives so that they could get the most from a cold and rough land.

Seward's Folly

In 1867, Russia told the United States that Alaska was for sale.

The price was \$7,200,000. This was a great deal of money for our government to spend 100 years ago. But it bought a chunk of land one-fifth the size of the entire United States. The price was only about two cents an acre. Still, many people thought the idea was foolish. Secretary of State William Seward made the agreement to buy the land. People in the United States





Alaskan gold miners in 1902. The man on the right is weighing gold dust on a balance. Gold was discovered near Nome in 1897. A great gold rush began. Thousands of men came to Alaska seeking fortunes. But the work was long, hard, and cold. And tiny, crowded cabins like this one offered the miners few comforts.

laughed at Seward. Some called Alaska “Seward’s Folly.” Others called it “Seward’s Icebox.”

Other Americans praised Seward. They knew money could be made from hides and fur in Alaska. They also thought that under all that ice and snow, valuable minerals and other raw materials might be hidden.

Early Days in Alaska

The lumbering, mining, and fishing industries in Alaska were owned by

companies in the United States. Many workers did not live in Alaska all the time. They were brought in to work for a year. Then they went back home, taking their savings with them. They did not spend much money in Alaska.

Alaska’s two most important products were salmon and gold. But those who caught the fish and mined the gold made their money as quickly as possible. Then they got out. They did not want to build Alaska. They did not worry about conserving her resources. Few were interested in developing a strong and healthy land. No one cared. Alaska was very cold and far away.

Everytime some new wealth, like gold or oil, was discovered, people swarmed into Alaska. The land’s population grew quickly. As soon as the treasure was harvested, people left. They went as quickly as they came. They got on ships and returned to their homes in Seattle, San Francisco, or Boston.

Behind, they left a land stripped of many of its resources. They left a native population unhappy and confused.

War Comes to Alaska

It wasn’t until 1941 that Alaska suddenly became very important to the United States. In that year, the United States went to war with Japan.

When war was declared, the Japanese began planning to conquer the

United States through Alaska. In 1942, they captured some of the Aleutian Islands.

In the meantime, the United States rushed soldiers and sailors to Alaska. Army and navy bases were built there. In 1943, the United States recaptured the Aleutian Islands. Never again did the Japanese take any Alaskan land.

The United States government realized that Alaska was an easy target for attack. The Soviet Union is so close that it can be seen from some parts of Alaska. So a plan for developing the empty land was begun. The United States wanted Alaska to be strong.

Social Capital in Alaska

The government did more than build army and navy bases in Alaska. It gave Alaska a lot of *social capital*. What is social capital? Social capital is all those things that a government builds using tax money. Things are built to meet the needs of all the people. Roads and harbors are examples of social capital. Dams, airports, and schools are social capital.

Before 1941, Alaska had little social capital. It had few roads, few schools, and few airports. It had only one railroad. But the government knew that more social capital was needed. The servicemen could not do their jobs without it. How could they travel with-

out roads? How could sick men be cured without hospitals? There had to be homes, schools, and libraries. These would serve the construction workers. It would serve the servicemen and their families.

The government also added to Alaska's social capital when it built the Alcan Highway. This highway was one of the longest roads in the world. It cost a lot of money. It was difficult to build. It ran through mountains, through forests, and across rivers. But it was built in one year. Now supplies could go to Alaska overland from the Pacific Northwest. During the war, it was too dangerous to ship them by sea. Japanese warships might sink the supply ships. But men and supplies poured into Alaska over the Alcan Highway. In 1941, there were only 9,000 soldiers and sailors in Alaska. Two years later, there were 150,000.

Alaska Becomes a State

In 1959, Alaska became part of the United States. Alaska is now one of 50 states. A state has more responsibilities than a territory .

Alaska now will have to depend more on itself. It must use its own savings to build and maintain roads in the state. Alaska's state government will now have to increase the social capital and maintain it.

RESOURCES OF ALASKA

Let's look at Alaska's resources. How can they be used for a healthier state?

Furs

The first white men came to Alaska to get furs. Seal, arctic fox, beaver, ermine, muskrat, and other fur animals are still in Alaska. But trapping them has become more difficult and expensive.

The profit from furs is too small to interest many people in trapping for a living. Also, the price of furs goes up and down. One year, a trapper may get \$5 for a white fox pelt. Then maybe the white fox fur goes out of fashion. Women refuse to wear it. The price of white fox fur may drop to \$1.

So not many people trap for a living. Even if they did, it would mean that more animals would be caught. There would be more furs for sale. This would make the price drop even more. So no one thinks the fur trade will get much bigger in Alaska.

Fish

The first settlers also came for salmon. During the Alaskan summer, millions of salmon swim out of the salty ocean. They swim up into the fresh waters of

rivers and lakes. There they hatch their eggs. During these times, fishermen can catch the most salmon easily.

For 60 years, the salmon catch grew bigger. It grew 100 times bigger. Then in 1936, the salmon catch was smaller. What happened?

The fishermen did not plan ahead. They overfished the salmon waters. There were just not enough grown salmon left. After that, the salmon catch got smaller. For 20 years, it got smaller and smaller.

Finally in 1959, the state of Alaska passed a law to protect salmon. Fisher-

Not all salmon are caught in rivers or lakes. These fishermen use nets called *seines* to catch salmon in open water.



men could catch only a limited number of fish. Soon afterwards, the salmon began to increase.

Alaska's fishermen catch other fish. They catch tuna, halibut, shrimp, and herring.

Many Alaskans fish in waters that other countries use. These are called *international waters*. Fishermen from the Soviet Union, Japan, and South Korea fish in the North Pacific near Alaska. Alaskan fishermen must compete with these other fishermen. They may not be able to catch as many fish as before.

Fishing is an important resource for Alaska. But only a few people can earn their living from fishing. Few think that fishing will become more important as a resource.

Gold

The next most important resources, after furs and fish, are minerals. For many years, the most important mineral in Alaska was gold. Prospectors streamed into Alaska whenever gold was discovered there. Some of the men who went to California in the 1849 gold rush headed for Alaska in the 1880s and 1890s. They slogged through the swampland and river valleys of Alaska. On their backs, they carried sleeping bags, picks, and shovels. They carried pans and dough for making



Modern gold miners use big machines like this dredge. It is dredging for gold and another valuable metal called *platinum*.

bread. Because of this, they were called *sourdoughs*.

The sourdoughs set up mining camps. Some camps lasted only a few weeks. Others grew into cities. Some became important cities like Juneau, Nome, and Fairbanks.

As in California, a few men made millions. Most men, however, made little or nothing. They left the gold fields poorer than when they came.

Some gold is expensive to mine. In *lode mining*, the gold is found buried



Much Alaskan coal lies only a few feet under the ground. Machines can scoop it out easily. This kind of mining is called *strip mining*.

in the rock. It is often underground. The gold must be drilled and blasted from the rock. This takes expensive equipment. Few miners there had the money to mine in this expensive way.

Inexpensive gold mining is called *placer* [PLASS-er] *mining*. Most gold hunters did placer mining. Little nuggets of gold are found in the sand and gravel of streams. Some gold is simply taken out with a shovel. Some of it is *panned*. That is, the miner dips a pan into the stream. Then he shakes and stirs the water in the pan. The lighter sand and gravel is washed out. The heavier nuggets of gold are left behind.

For fifty years, great amounts of gold were mined in Alaska. There is still plenty of gold there. There are

still plenty of people who would like to mine gold. But from 1940 to 1970, few people tried to take gold out. They just could not afford to do it. The cost of mining went up. But the price of gold did not go up in the United States.

Copper

In the early 1900s, copper was discovered in the Copper River Valley of Alaska. The Kennecott Copper Corporation built a port at Cordova. It also built a railroad to the copper deposits. It was only 194 miles long, but it cost \$20 million to build. It is expensive to get raw materials out of Alaska.

Millions of pounds of copper were produced between 1911 and 1938. The value of the copper was more than \$200 million.

Copper is not produced now in many places in Alaska. The price isn't high enough to cover the cost of mining and still make a good profit. But scientists know that large copper deposits are in Alaska. When the price of copper rises, more of it will be mined.

Coal

Coal was not mined very much in Alaska until 1914. The government owned most of the land. It would not give miners the right to dig coal. So coal had to be brought in from the lower 48 states. But in 1914, the government let miners dig in Alaska. A railroad was built to carry coal from the mines to the cities. Until 1948, the Alaska Railroad was one of the main users of coal. But then it began using diesel engines. Coal is no longer needed. Most of Alaska's coal was used to heat army and navy bases in the state. Now those bases use gas or oil. As a result, Alaska's coal mines have begun to close.

There is still hope for the future of coal in Alaska. Scientists have found other uses for coal. From coal they make fertilizer, weed killers, dyes, medicines, perfumes, and plastics. Some day factories that change coal into these products may be built near the mines. Coal need not be shipped over long and expensive distances. If this happens,



Loggers harvest trees in Alaska. If the huge Alaskan forests are taken care of, they will continue to provide timber and beautiful scenery for many years.

coal may be a healthy industry in Alaska.

Forests

Alaska has 140 million acres of forest land. Most of it is in the southern part of the state. But for many years, little lumbering was done. The forests were hard to reach. It was expensive to bring in logging and sawmill equipment. It was cheaper for men to import wood than to cut their own.

Today, there are two large pulp mills and about thirty-five sawmills in Alaska. Within five years, the output of the mills may double. Japanese and American companies have promised to buy millions of dollars worth of lumber.

Agriculture

A citizen may have Alaskan land free if he builds a house on it. He must also farm at least part of it. He must live on the land for at least two months a year for three years. This sounds easy. But it is not. Homesteading in Alaska is difficult and costly. There is hardly any free land left that is fit to live on.

First, the homesteader must clear the land of trees and brush. He usually has to build a road to get to the land. Then, he must build a house. Farm machinery is expensive. It usually takes from five to ten years before the land can support a farm family.

Many homesteaders were unfamiliar with this cold land. They selected their land in winter. The ground was covered with snow. When summer came, some got a shock. They discovered they had chosen wet swamp. Two out of every three homesteads in Alaska have now been given up.

It is hard to farm even good land in Alaska. The winter is long. Spring is often late. The land is cold. The soil is thin and rocky. Even the good soil cannot grow just any crop. There are few roads. Only farmers who are close to cities or army camps can survive.

The Alaskan summer day has about 20 hours of sunlight. This causes some vegetables to grow to weigh 40 pounds. But still all that sunlight does not warm

the soil enough. It cannot grow corn and tomatoes.

The farmer outside Alaska usually sells his crop to a food processor. The processor cleans, cans, or freezes the food. Once the farmer sells his crop, he has nothing more to do with it. But in Alaska, there are few food processors. The Alaskan farmer must do all the work himself. He must clean and pack his products, and take them to the customer. This costs money. To make a profit he must then charge high prices for his products. Food that is grown outside the state can be shipped in and sold more cheaply than food from Alaska's farms.

Oil

Oil may be the key to Alaskan prosperity. In 1968, the largest known oil pool in North America was discovered. It lies in that part of Alaska called the North Slope. This is the land, north of the Arctic Circle, that slopes down to the frozen Arctic Ocean.

By the fall of 1970, oil companies had already paid Alaska \$900 million for oil rights on the North Slope. The state may make as much as \$2 billion dollars from oil.

But the oil is in a great empty part of the state. It is hard to drill for oil through frozen ground. Even when it is drilled, how will the oil get to the markets outside Alaska?

It is too expensive to fly oil out in airplanes. It is almost impossible to ship oil out because of the frozen ocean. Some companies, however, are thinking of building great icebreaking ships.

Other experts believe the oil might be shipped out through large pipes. It could be done through a system of pipelines. One plan is to pipe the oil from the North Slope to the ice free port of Valdez. This port is on the southern coast of Alaska. The distance is about 775 miles. Tankers in Valdez could then take the oil to markets and refineries.

Some people fear, however, that the pipeline may upset the balance of nature. They point out that the pipelines would cross mountains, rivers, streams and three active earthquake zones. One break in the pipe could dump about 20,000 barrels of oil onto the land. This could kill all the wildlife and poison the water for miles around.

Those who are for the pipeline say that it can be built with care. The balance of nature can be protected. At the same time the people of Alaska will also benefit from the sale of their oil to the country and to the world.

Tourism

Another resource is the tourist industry. The beautiful countryside brings more people to Alaska every year. In 1967, there were 85,000 people who came and spent \$25 million there. Some say



It is difficult and expensive to build oil rigs on Alaska's frozen North Slope. But oil companies think that it is worth it. They think that the area will provide five to ten billion barrels of oil.

that by 1980 visitors will spend \$100 million in the state. Others aren't too sure.

The things that tourists need for comfort must come from outside Alaska. This includes food, furniture, and building materials. A large part of the income from tourism must be spent outside the region. A region doesn't prosper unless the money stays in the region. For those reasons, many doubt that tourism will help Alaska very much.

NATIVES OF ALASKA

Those who lead the hardest lives are the natives—the Indians, Eskimos, and Aleuts. Many of them are poor and uneducated.

Native Beliefs

The natives have never been treated well. Some white men consider them inferior just because their ideas about life are different.

For example, many natives believe that land and its resources belong to nature. Man cannot own them. Man only has the right to use them.

White settlers, however, believe that natural resources were created for man. Man should look for them and use them for his benefit.

Another difference in belief concerns people. The natives believe that the group is more important than one person. So native children do not try to compete. They do not try to do better than anyone else. They believe it is shameful to do so.

Whites, however, believe that each man should gain personal success. He should do so, even if he sometimes succeeds at the expense of everyone else.

These differences in ideas have caused misunderstandings between the white settlers and the natives. They continue to do so.

Do the Natives Own the Land?

There is a small Indian village in southeast Alaska called Tanacross. It is on the banks of the Tanana River. In 1963, the people of this village spoke to the judges of a United States court. They asked the judges to declare that the Indians were the owners of the land they lived on. The United States, in turn, told the judges that the government, not the Indians, owned the land.

The Indians argued that their people had been on the land for many years. They had traplines, and fishing, and berry camps on the land. On this land they hunted caribou and moose. From this land they got food for their families.

The Indians of Tanacross were just one small group making land claims. Thousands of Indians, Eskimos, and Aleuts were doing the same thing. They claimed that the land they lived on was theirs.

What right did the Alaskan natives have to the land? The land had been bought by the United States government. The natives said the land was theirs because they found it first.

How the Problem Began The problem has a long history. Russian explorers

came to Alaska about 1750. They claimed all of Alaska for Russia.

The Russians and the natives did not understand each other. The natives thought that the Russians respected their rights of ownership. But the Russians really believed the land belonged to them. They just let the natives stay and work the land. This led to the argument about land rights today.

Russia sold Alaska to the United States in 1867. The two countries agreed that the United States government now owned all the land. They agreed that the Alaskan natives would live under the rules of the United States.

The United States government decided it would watch over the natives. The natives would be protected and cared for. But the natives said, no thank you! They did not want the protection of the United States. They just wanted their land. Then they could take care of themselves. They wanted to keep the old ways of their people. But freedom and dignity were impossible without the land.

In fact, the natives could hardly earn a living without the land. Those seeking a better way of life had to move to the towns. In the years from 1960 to 1967, the native population of the Fairbanks area doubled. The native population of the Anchorage area more than doubled.

But these natives often did not have the skills needed to work and live in

towns. Many of them could find no jobs. They lived in poor slums and were no better off than they were in the rural areas.

How could they get help? How could they draw attention to their needs?

Pressing Native Land Claims The Indians of southeast Alaska lived closest to the lower 48 states. They saw how people acted there when they wanted the government to do something. They got together and elected lawmakers to represent them in the government. There are two important political parties in the United States. One is the Democratic party. The other is the Republican party.

An Eskimo village council meets in a schoolroom. Once, Eskimos and other Alaskan natives ignored politics. Now they are interested.



The Indians discovered that the two parties paid little attention to the ideas of just a few people. This is because those people represent only a few votes. But both parties did pay attention to the wishes of a large group. A large group speaks with a loud voice. It represents many votes.

To make their voices heard, the Indians of southeast Alaska formed a large group. It was called the Alaska Native Brotherhood. Soon after, the Alaska Native Sisterhood was formed. Indians of southeast Alaska make up most of the membership of both groups. Eskimos, Aleuts, and the Indians of central Alaska lived too far away. They were not interested. They had not yet learned how to influence political parties. They did not know how to fight for what they wanted. But gradually they learned.

In 1960, six native political groups united. They formed one large group. The voice of this group was even louder. It represented even more votes. The group was called the Alaska Federation of Natives.

The Natives Get Results

In 1966, the Alaska Federation of Natives filed its first land claim. The natives asked for the return of some of their land and money for land that was not returned. By the summer of 1971, the United States Congress had voted to give the natives about \$1 billion and millions of acres of land.

Under the land are great deposits of gold, coal, and oil. On parts of the land are great stands of forests. This may bring in more money for the Indians, Aleuts, and Eskimos. All this will improve life for everyone in Alaska.

PROBLEMS AND PROSPECTS

Transportation Alaskans have trouble just getting together. Many towns have no roads. They have no ferries. They have no railroads. Towns depend upon airplanes. But there are only four regular airlines in the state. Also air transportation is costly.

Communication Communication is also expensive in Alaska. Cities are far apart. So the telephone, telegraph, and mail service are important. But the rates for these are high. They are four times higher than in the rest of the United States.



Alaska today is like two different places. One is old, the other new. In the old Alaska, men still use dog sleds to cross the cold, barren land. In the new Alaska, large cities like Anchorage rise.

Economic

- The cities are far apart. They have different interests. Because of this, they are rivals of each other.

In the last 20 years, Anchorage has become the largest and most important city in the state.

- It costs more to live and do business in Alaska than anywhere else in the United States. This will continue to be true. The distances and cold climate are partly responsible for the costs. Small companies cannot stay alive there unless they charge high prices. Even the large national companies cannot earn a profit unless the local market is large enough. For example, a large chain of department stores can earn a profit in Anchorage. But there aren't enough

people or business in most cities to keep a store open.

- The federal government will spend less in Alaska. Defense needs change. Large armies may not be needed in Alaska. Defense weapons can be operated by men far away who fire the guns by pushing buttons. The big military camps can be closed. This would hurt Alaska.

- There are conflicts between those who want to conserve the state's resources and businessmen who want to use them. The government controls the use of land to protect wildlife and resources. But many industrialists and other businessmen will not invest in the state unless they have a freer use of land. This problem continues to hold back the growth of Alaska's economy.

- Alaska has little capital. Many people who have earned incomes leave the state. They come back to the lower 48 states. This means that there is always a lack of savings to lend. So there is never enough to develop business and industry. The people who leave the state are often wise and experienced. These are just the people needed to build a frontier economy.
- Alaska will continue to be far from world markets. There are airplanes. But it is too costly to ship large amounts of heavy goods this way. And some Alaskan seaports are frozen in winter.
- Alaska knows little about its resources. Little research is being done. The University of Alaska is the only important research station in the whole state. The oil, timber, and fishing industries use new techniques. They have new ways of drilling and harvesting their products. But other Alaskan industries are far behind those in the lower 48 states.
- Alaska's markets are too small for much local manufacturing. Alaska buys most manufactured goods from other states. This is cheaper than manufacturing its own products.
- Land claims discourage development. A large part of Alaska is claimed by Eskimos and Indians. The United States government is giving some land back to them. But no one knows yet just how much land or where the land

is. Until the claims are settled, few people will spend much money developing land. They will wait until they know for sure who owns the land. This holds up development.

Can Alaska Learn from Other Cold Frontiers?

Alaska will not be developed in the same way as the American western frontier. But there are cold lands similar to Alaska. Canada has a very large "cold frontier." So does the Soviet Union.

Russia and Canada do not send great numbers of people there. Instead, small numbers of people are grouped in a few important centers.

These people are scientists and technicians. They understand the resources of the land. They know the best ways to develop them. Cities on the Russian "cold frontier" are centers of life for the people there. People leave for the countryside for a few days. They farm. They mine minerals. Then they come back into the cities.

Social capital can be built most cheaply in a few centers of population. Roads, schools, and hospitals are built in cities. Here are the centers of amusement and recreation. The only social capital that goes out are lines of transportation. These lines of transportation reach out in all directions to where the natural resources are.

For example, in Alaska oil crews, lumbermen, and fishermen fly out of a few population centers. They fly to where the resources are. They work there for a few weeks. Then they fly back to the comforts of the cities.

These people are somewhat like the “sidewalk farmers” of the Great Plains. They live in town at night. But they go out to work on their farms during the day.

Still, Alaska can learn from other northern neighbors. They are all constantly experimenting with seeds and livestock. They seek to find what crops grow best in cold soils. What kind of animals can live best on the cold tundra? They can help each other by pooling their knowledge.

Alaska Today

One hundred years have passed since Alaska was bought by the United States. Has it proved to be Seward’s Folly as people said long ago? Is Alaska only an icebox?

Or has Alaska become a country of the future as other people said it would? Is it now a country that will support a million people as some promised?

Alaska is neither. Alaska does not support a million people. But it does support 270,000. Alaska is not an “empty icebox.” Its economy is becoming a more important part of the American economy. It is doing this in spite

of a difficult climate, rugged mountains, and poor transportation.

Still, Alaska’s future is uncertain. The economy is still based on a few natural resources. Alaska is a frontier land just as it was 100 years ago.

It is possible that the problems created by nature will be too much to overcome. Alaska may collapse economically because of them. It may also collapse because men waste the land’s resources.

Alaska’s future really rests on the answers to three questions: Can science and technology find a better way to develop a cold frontier? Will the people of Alaska agree about the future goals of their state? Will they have the wisdom and courage to achieve them?

Test Yourself

1. What is meant by social capital? What types of social capital does Alaska need the most?
2. Why did Alaska’s importance increase during World War II?
3. Why are mining operations so expensive in Alaska?
4. How is the way of life in Alaska similar to life on the “cold frontiers” of Canada and Russia?
5. Why does it cost more to live and do business in Alaska than in any of the other states?

CHANGES IN ESKIMO LIFE



Long before white men came to Alaska, the Eskimos had learned to live in this cold and barren land. It was a hard life. They could survive only by using every resource of the land.

They made houses from dirt and bits of driftwood (1). In winter they built houses called *igloos* (2). These are made of snow. Heat and light came from oil-burning lamps. The people fished and hunted seal, walrus, and other animals for food (3). From the skins of these animals they made clothing and even boats (4).



Some Eskimos still live like this. But the white men brought new goods and new ways of doing things. Today, Alaska is still a mixture of old and new. In many villages, there are new wooden-framed houses with kerosene stoves and electric lights.

In some parts of the state, natives still travel by dogsled (5). They still use harpoons or bows and arrows for hunting. But most natives prefer to hunt with guns (6), which the white men brought to their region.





Some natives spend part of their time working at new jobs. During the summer, they may go to a big city like Anchorage. There they work in factories or help to build offices and houses.

Other natives earn money by using their old skills. They sew fur pelts (7) or carve ivory figures. They trade or sell their work to outsiders and tourists.

With the money they earn, the natives buy food which cannot be grown in the cold Alaskan climate. They buy warm woolen clothing and hunting equipment. The frontier regions of Alaska are hard to reach. Goods must be brought in by airplane or boat.

Native children still learn how to hunt, fish (8), and sew. But they also may go to modern schools (9) in the villages and towns. In school, they learn new skills. The skills will help them to earn a living in the changing Alaskan society.





Chapter 10

Hawaii: Region with a Blueprint

How would you like to live in a region where the sun shines every day? You could play every day on palm-shaded beaches. You could swim in clear-blue water. In the deep green forests are beautiful lakes and waterfalls for fishing. The countryside is full of good things to eat like pineapples and *macadamia* [MACK-uh-DAY-mee-uh] nuts.

There is such a place. It is a region composed of a group of islands far out in the Pacific Ocean. They are the Hawaiian Islands. They form our fiftieth state. Hawaii became a state in 1959. For years, the islands have been called the most beautiful in the world.

They are also called “the crossroads of the Pacific.” People come there from all over the world. Many languages are spoken there, and there are many ways of living. But there isn’t much land, and people keep coming. So the people have had to think about what they want their islands to become. What kind of life do they want there? The people of Hawaii have planned and made a blueprint for the growth of their state.

THE LAND

The Hawaiian Islands are made up of eight large islands and more than 100 little ones. They are scattered across the Pacific Ocean for about 160 miles. The state of Hawaii includes all these islands. Most people live on the eight large islands of Hawaii.

How Land Was Formed

All these islands are really mountain tops that stick up above the surface of the water. The mountains were built up from the ocean floor over millions of years by volcanoes.

The birthplace of the volcanoes is a crack in the floor of the Pacific Ocean. This crack stretches for thousands of miles across the ocean floor. Millions of years ago, hot, melted rock from the center of the earth began oozing out of this crack. This melted rock is called *lava*.

As the lava poured out onto the sea floor it was cooled by the water. The lava then formed a solid black rock. This rock got thicker and higher as more and more lava poured out. Finally it rose up above the surface of the ocean. After a long time, some of the volcanoes cooled off. They erupted no more. Now they are extinct. This means they are dead.

Other volcanoes in Hawaii are still alive. *Mauna Loa* [MOU-nah LOU-ah] and *Kilauea* [KEE-lou-AY-ah] on the island of Hawaii erupt now and then.

Both Mauna Loa and Kilauea still pour out melted rock. They are still building and changing the island of Hawaii. It is called the "Big Island." The island is getting higher and wider. As much as five hundred acres of new land have been added in one year.

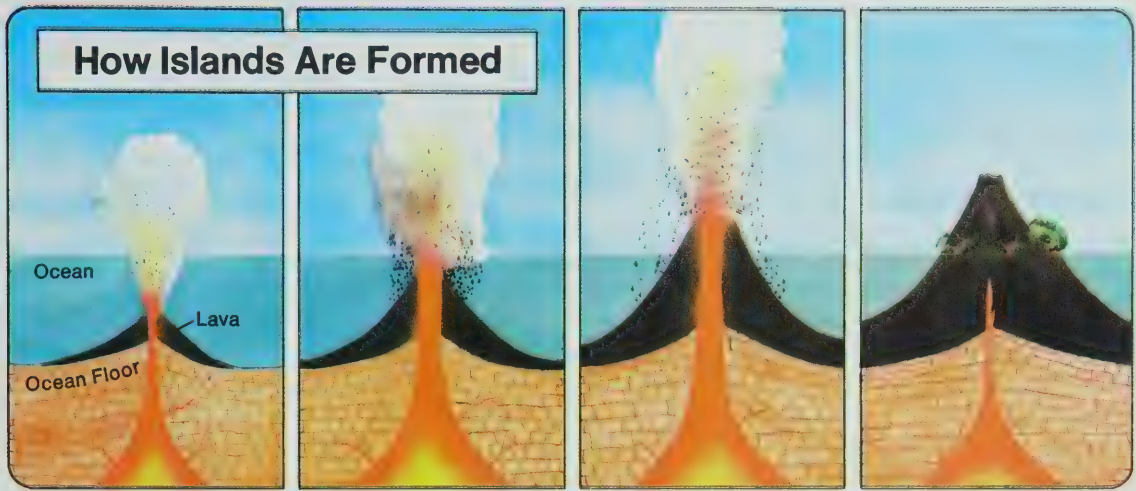
How Climate Is Controlled

The Pacific Ocean keeps the climate of the islands mild. The big ocean cannot change its temperature quickly. So there is little difference between the seasons. This makes it possible to grow crops all year long.

Although the climate is mild, it is different in different parts of the islands. At sea level, the air is warm. On the high mountains, it is cool.

Cool, pleasant winds blow from the northeast almost all the time. These winds are part of the *trade winds*. They blow steadily day after day.

As the winds blow across the ocean, they pick up moisture. Finally, the trade winds bump into the high mountains of the Hawaiian Islands. The winds are forced up the northeast side



of the mountains. When the moist air gets up high enough, it gets cold. Cold air cannot hold as much moisture as warm air. It drops the moisture in the form of rain. When the trade winds get over to the south and west sides of the high mountains, they have little moisture left. So it doesn't rain much. The south and west sides of the islands are dry and sunny.

Thick forests grow on the windy, rainy sides of the mountain. Sugar cane grows well there. On the dry southern and western sides, short grass and cactus grow. Cattle ranches and pineapples do well there.

Only about one-eighth of the land of Hawaii can be used for farming. The mountains are too steep. The land is too dry.

THE PEOPLE

Those Who Came First

Historians think that the first people who came to the Hawaiian Islands were Polynesians. *Polynesian* is a Greek word. It means "of many

islands." The Polynesians came in large canoes across thousands of miles of empty ocean.

They probably came from islands near the South Pacific more than a thousand years ago. The Polynesians



brought plants like sugarcane, coconuts, sweet potatoes, breadfruit, bamboo, and taro—their chief vegetable. They brought chickens, pigs, and dogs with them in the canoes.

After perhaps months of sailing on an empty ocean, they reached the beautiful islands of Hawaii. The Polynesians were the first Hawaiians.

Food was plentiful. The ocean provided fish. The people also raised fish in ponds. They raised pigs and chickens. They planted small patches of sweet potatoes and taro.

The soil was rocky. They had to use digging sticks to plant their gardens in the heavy soil. There were no metals

on the islands. Many tools had to be made from stone. The Hawaiians used stone tools to cut down trees, trim branches, and hollow out logs. Since they had no iron, they had no nails. They built houses by making a framework of wood. Then they covered the framework with long grasses or leaves.

The Old Ways of Life

The Hawaiians shared work and pleasures. The world around them was beautiful. They loved and enjoyed their islands. When the fishing was good, they stopped their other work to go fishing. At harvest time, they celebrated. If one family had extra fish or

food, they shared it with others. The Hawaiians were a generous people.

The Hawaiians were divided into several groups. The head of each group was a high chief. Beneath the high chief were other chiefs who carried out his orders. The chiefs and their families did not have to work. Other people did their work and served them.

There were priests and prophets who advised the high chiefs. They helped them make rules for the people. The rules for the Hawaiian way of life were found in the *kapu* [КАН-поо] system. *Kapu* means “you cannot” or “it is forbidden.” The punishment for not obeying a *kapu* was severe. It could even be death.

These were some of the things that were *kapu*:

- It was *kapu* for common people to touch a chief's clothing.
- It was *kapu* for men and women to eat together.
- It was *kapu* to talk to fishermen on their way to fish.

The Hawaiians thought fire and lightning were gods. The Hawaiians believed in many gods. There was a god of war and a god of peace. There was a god of light and a god of hunger. When misfortune came, the Hawaiians thought the gods were angry. When the volcanoes erupted, they thought that *Pele* [PAY-lay], the volcano goddess, was angry.

One way to keep the gods contented was to perform special ceremonies. There was a ceremony for eating. There was a ceremony for going to sleep. There was one for entering a new home or building a canoe. The ceremonies had to be performed just a certain way. If a mistake were made in the ceremonies, the Hawaiians believed the gods would be angry.

In Hawaii no one owned the land. It all belonged to the gods. The high chiefs were the caretakers of the land.

A Hawaiian priest leads a ceremony to *Ku*, the war god. *Ku* was the most important of the four main gods in the traditional Hawaiian religion.



Each high chief divided the land among his chiefs. It was for their use. But they did not own it. The common people worked the land. They made crops grow. But they never thought of owning the land any more than they thought of owning the ocean.

People paid taxes to the chiefs for the right to use the land. It was the high chief who decided how much the tax would be. The tax was not paid in money. People did not use money very often at that time. They used goods instead. Taxes might be paid in fish nets or bird feathers. Each year the people had to give more than half of everything they produced to the chiefs. For many years, this tax was a sad and heavy burden on the Hawaiian people.

Sailors Discover Hawaii

In 1778, two great sailing ships dropped anchor off the island of *Kauai* [kou-eye]. The strangers who came ashore were the first European sailors to visit Hawaii. They were led by the English explorer Captain James Cook. Their eyes widened with delight as they explored the beautiful islands and met the friendly people.

The Hawaiians were excited. These were the first foreigners they had ever seen. To the islanders, they were like men from the moon. Their clothing,



Captain Cook lands on Kauai. Friendly Hawaiians greet the explorer and his men.

food, and manners were different from anything the Hawaiians had ever seen. At this time, there were about 300,000 Hawaiians living on the islands. In the years following, more and more sailing ships came. More foreigners stepped ashore in Hawaii. Hawaii became part of a growing trade pattern.

Sailors found the islands a happy place to rest after long weeks at sea. Some sailors liked Hawaii so much they left their ships. They stayed on the islands.

But these sailors brought much unhappiness to the Hawaiians. They brought diseases to the islands. The Hawaiians had never had measles, tuberculosis, or chicken pox. When they caught them from the sailors, they suffered more than the nonislanders would. They had no resistance to them. Many of them died from diseases like chicken pox and measles.

The sea captains and sailors traded with the Hawaiian chiefs. They traded nails, tools, and mirrors. In return, they received fresh vegetables, pigs, fruits, and water.

Traders Arrive

Traders found that they could earn great profits by trading Hawaiian sandalwood to the Chinese. The Chinese valued sandalwood highly. It was used for carved boxes and fans. It was also used for making perfumes and medicines. The traders asked the Hawaiian chiefs to get more and more sandalwood for them. So the chiefs ordered people into the forest to cut down the great sandalwood trees.

The demand for sandalwood increased. People had to work such long hours that they had no time to plant their gardens. There was no time for fishing. Many Hawaiians died from lack of food. Finally, all the sandalwood

was cut. By 1830, the lovely sandalwood forests were gone, and half of the Hawaiians were dead. Half of a people were destroyed so that others could have sandalwood boxes, fans, and perfumes.

The First King and the Breakdown of Kapu

One of the chiefs was very ambitious. His name was *Kamehameha* [*kah-MAY-uh-MAY-hah*]. He traded, especially for guns. His soldiers, armed with guns, defeated the armies of other chiefs on the island of Hawaii. Between 1790 and 1795, he became the first king of seven of the large islands of Hawaii.

About this time the Hawaiian kapu system began to break down. The Hawaiians saw that the foreigners broke the rules, yet they were not destroyed by the gods. The foreigners got away with disobedience. So the Hawaiians lost faith in their gods.

Whalers Arrive

In the early 1800s, whale oil was in great demand around the world. It was used for lamps, candles, soaps, and paints. Whalebone was used for ladies' corsets and skirt hoops. It was used for gentlemen's canes and fishing rods.

Whalers had killed most of the whales in the Atlantic Ocean. Then

news came that great numbers of sperm whales were in the Pacific Ocean. European and New England whaling ships sailed around the tip of South America. In the summer, the whaling ships hunted in the North Pacific. In the winter, they hunted near the equator. Halfway between lay the Hawaiian Islands. Twice a year, the whaling ships stopped off at the islands. By the 1840s, more than 400 ships came into ports of Hawaii every year.

When oil was discovered in Pennsylvania, in 1859, whale oil was no longer needed. In addition, many whaling ships were wrecked. Some were sunk during the Civil War. In 1871, thirty whaling ships were frozen in the arctic ice. By then the whaling industry was almost finished.

Missionaries Brought Christianity

In 1820, the first eager missionaries came to Hawaii. They came from New England on a New England whaling ship. The missionaries found the Hawaiian people in a sad state. Most Hawaiians no longer believed in their old gods. The old kapu system had broken down. The people were miserably poor and hungry.

Hawaii had been like a paradise. But the greedy traders and corrupt chiefs had ruined it.

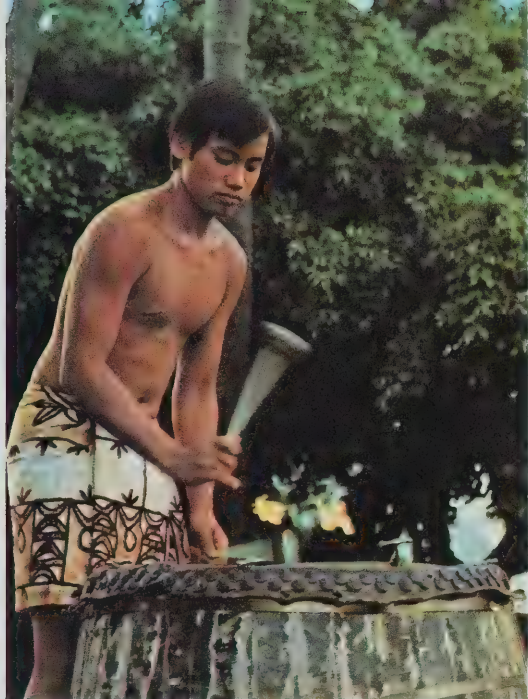
The missionaries were young and eager to help the Hawaiians. They set up hospitals, schools, and churches in little grass houses.

In the past, the Hawaiian language had been only a spoken language. The missionaries invented an alphabet for the language. They began to print little spelling books and reading books. They translated the Bible into the Hawaiian language.

By 1832, there were 53,000 Hawaiians in school. Most of them were adults. Many became teachers. By 1846, eight out of ten Hawaiian people had learned to read.

The missionaries' ideas about life were very different from the old Hawaiian ideas. The missionaries believed that God made all men equal. They believed that men should work hard to make themselves better. They thought the Hawaiians should plan and save for the future.

The Hawaiian idea of life was different. They were interested in what happened to them now. They were less interested in what happened in the future. They saw little hope in the future. The Hawaiians never dared to think that all men were equal. They believed that their chiefs were above other men. It did not matter how hard the common people worked. They could never expect to be better off than they already



A few signs of old Hawaiian ways of life still exist. Some natives make nets (right) and live by fishing. Other customs remain as tourist attractions. The drummer (above) plays in a traditional ceremony at Waikiki Beach. Tourists also take rides in outrigger canoes (below). The outrigger balances the narrow boat.



were. As soon as the common people worked harder to get more, the chiefs would take it away from them. It was better to share what they already had with the people around them. They lived only for the moment.

The missionaries were strict. They thought they knew best what was good for the Hawaiians. They tried to change many Hawaiian beliefs and customs. They did not approve of the Hawaiians' dancing. They did not like the way Hawaiians lived just for the moment.

In spite of their strictness, the missionaries won the trust of the Hawaiians. By 1835, missionaries were advisers to the king. They even held important government offices. They served the Hawaiian government faithfully.

Hawaii was changing fast. The old religion was dying out. So were the old Hawaiian customs. Foreigners were pouring into the islands. They had strange ideas and strange ways of living.

Foreigners wanted change. Traders wanted to build farms and businesses. But they were uneasy. Everything they wanted to do had to be okayed by the king. The Hawaiian king was all-powerful. If he wished, he could ruin their businesses. He could even take land away from them.

New Laws

Missionaries and traders spoke to the king. In 1840, he agreed to a written constitution for the kingdom of Hawaii. This constitution said that nothing could be taken away from any individual except by law.

The constitution permitted the Hawaiians, for the first time, to take part in their government. They could elect lawmakers. They were free from the rules and commands of the king and chiefs. One of the first laws of the new government was to set up a public school system in Hawaii.

The missionaries also persuaded the king to divide up the land. Now people could really own some land.

Another law allowed foreigners to own land in Hawaii. This caused trouble.

These laws did more harm than good to the common people of Hawaii. Foreigners who had money could now buy land. The common people had little or no money. They had to sell their newly won land to get money to live. Many were forced to sell land to pay taxes to the government. Today, Hawaiians and part-Hawaiians own little of their land. In the end, the new laws left Hawaiians little better off than they had been before.

THE PLANTATION SYSTEM

Sugar Began It

Foreigners bought land from the Hawaiians. They used the land for large sugar plantations. Sugarcane grew well in Hawaii. But sugar plantations needed many workers. Fields had to be plowed and planted. They had to be weeded by hand. Sugarcane becomes a thick tangle of stalks. Its leaves are over ten feet high. Workers first must chop away the leaves by hand. Then they cut the stalks. They tie the stalks in bundles and carry them to the sugar mill.

Bosses made the workers work as fast as possible. Sometimes they used whips to speed up the work. Harvesting sugarcane was hot, hard, work.

Workers chop sugarcane with long knives called *machetes*. Later, the stalks are crushed. The clear, sweet juice is boiled to make sugar.

At first the sugar plantations hired Hawaiians to work in the fields. But the native Hawaiians did not like working so hard in the hot sun. They saw no reason to do it. They preferred to go on living in their old ways.

Workers Are Needed

Plantation owners then began to bring workers from other parts of the world. The workers signed contracts. They agreed to work for three or five or ten years. The plantation owners paid the workers' way to Hawaii. The owners provided housing. In turn, the workers paid for their own food and clothing. They could save wages. But they could not return home until they had worked for the number of years in the contract.



In 1852, 300 Chinese workers were brought to Hawaii. Times were hard in China. Workers came without their families. They hoped to earn a lot of money and take it home.

In the 1860s, the plantation owners began to bring workers from Japan. Workers were brought from Europe next. Then Puerto Ricans and Koreans came.

The last workers to arrive in Hawaii were from the Philippine Islands.

Some workers returned home after they finished their contracts. Others stayed. Many Chinese and Japanese workers sent for their families. By 1900, three-fourths of the people in Hawaii were Chinese or Japanese.

Sugar Planters and the Sugar Tax

Each plantation was run by a manager hired by the owner. The owner was a businessman who usually lived in Honolulu, not on the plantation.

The manager lived well. He had a nice home with many servants. It was often on top of a hill with a fine view. The manager and the owner earned good incomes.

After the 1849 California gold rush, many people went to California. They created a big market for Hawaiian sugar. This pleased the Hawaiian sugarcane growers. But Hawaiian sugar had to compete with United States sugar.

States like Louisiana produced sugar. American sugar growers did not want their customers buying Hawaiian sugar. This would make them lose income, so they complained to the government. The United States agreed to tax sugar coming into the country. The tax raised the cost of Hawaiian sugar. United States sugar growers were pleased. But Hawaiian sugar producers made less profit.

The Hawaiian sugar growers complained. As a result, in 1875, Hawaii and the United States signed an agreement. The United States removed the tax. Now sugar growers on the islands could earn a better profit. In return, Hawaii let American products come into Hawaii without tax. Hawaii also let the United States build a naval base at Pearl Harbor. This agreement was the beginning of a close relationship between Hawaii and the United States.

The sugar growers and merchants in Hawaii became very powerful. They wanted to be sure the United States would not put another tax on Hawaiian sugar. The best way to be sure of this was for Hawaii to become part of the United States. Then Hawaiian sugar would be United States sugar.

Queen Liliuokalani Deposed

In 1892, the sugar growers and merchants led a revolt against the young Hawaiian queen, *Liliuokalani* [li-LEE-

uh-WOH-kuh-LAH-nee]. They forced her to abdicate. She stepped down from the throne, and Hawaii became a republic. Six years later, the United States took over the islands.

In 1900, the United States and Hawaii agreed that Hawaii should become a territory of the United States.

Trading Companies Started

Plantation owners had little time to find sugar buyers and talk with them. Some plantations were on the small islands of Hawaii. The buyers were 2,000 miles away in the United States. The mail was slow. There were no tele-

phones then. A plantation owner had to pay a ship's captain to ship raw sugar to a market. He hoped the captain would sell it for him at the best price. This was not good business.

There were merchants in Honolulu who offered to serve the sugar plantations. They offered to ship the sugar, and to find markets in the United States. They also offered to find workers for the plantations. They said they would order tools and equipment from the United States. They would even act as bankers for the plantations. They would lend the plantation owners money.

In the late 1800s, ships like these filled Honolulu harbor. Hawaii has always depended on ships for trade with other places.



The Big Five Five companies performed these services. They became important businesses all over the world. In the Hawaiian Islands they were known as “the Big Five.”

The C. Brewer and Co., Ltd.
Theo H. Davies and Co., Ltd.
Amfac, Incorporated
Castle and Cooke, Incorporated
Alexander and Baldwin, Incorporated

The Big Five companies bought a lot of land. They earned income from the land and from businesses. They put savings wherever they would earn profits. Since there was little competition in Hawaii, the companies earned big profits. They bought plantations. They became part owners of many other plantations.

People who owned the five big companies knew each other well. Their families intermarried. They were all related to each other. Together, they controlled the use of land, the banks, and the shipping lines. They controlled the insurance companies and the wholesale business. They controlled the stores, hotels, the electric company, the gas company, and the telephone company. They ruled it all, and for years no new businesses could get started unless the people in the Big Five started them.

Pineapple Plantations Began

In 1900, sugar was the only important export of Hawaii. Hawaii depended on it for income. If the price of sugar was high, profits were high. Then times were good in Hawaii. If the price of sugar was low, profits were low. Then times were bad in Hawaii.

Hawaii needed other crops and industries. People didn't want to depend on the ups and downs of sugar prices.

Pineapples grew well in the warm climate of Hawaii. But how could the fruit get to the United States without spoiling?

A young man solved that problem. James Dole was an American from New England. In 1901, he started the Hawaiian Pineapple Company. He built a cannery for his pineapples. Now he could ship them to the mainland, because canned pineapples would not spoil.

At first, every pineapple was peeled by hand. This was a long and expensive way to work.

One of Dole's workers, Henry Ginaca, invented a machine that could peel and core one hundred pineapples in a minute. His machine is still used.

Mr. Dole's cannery packed 1,893 cases of pineapple in its first year. Today, the Dole Company packs that

many in three minutes. Now 30 million cases of pineapple fruit and juice are packed in a year. In fact, pineapple is Hawaii's second most important product.

Plantations and Unions

The plantation owners were the rulers of society. They saw themselves as kindly fathers. They felt that they had to take care of their workers as if they were children. But they expected the workers to obey them. The workers had to be satisfied with what they were paid. Workers could not ask for what they thought was fair.

People on the plantations worked very hard, but got little pay. They were not allowed to criticize anything on the plantations. They were not allowed to

vote. They were not allowed to form unions or to strike. Workers who tried to were fired from their jobs.

Pay Scales Each group in Hawaii was paid a different wage for doing the same work. Here is a list of the daily incomes of some skilled workers in 1905:

Whites		\$4.38
Hawaiians		1.68
Chinese		1.06
Japanese		.97

The Japanese worked as hard as anyone else, but they were paid much less. This, of course, made them angry and jealous of the other groups. But it pleased their bosses. By keeping the groups jealous of each other, the planters kept the workers divided and weak.

When Queen Liliuokalani abdicated, Sanford Dole (center) became President of Hawaii. Later he was appointed territorial governor. He was a cousin of James Dole, the famous pineapple planter.



The First Strikes The Japanese struck in 1909 and 1920. But without unity the workers' strikes always failed. Workers finally learned that no group could stand alone. They all had to unite in a strike to win.

Unity was difficult because workers spoke different languages. But they began to develop a common language. It was called "pidgin" English. This is a mixture of English, Hawaiian, and several other languages. After a while they began to understand one another.

In 1935, the United States Congress passed a law. The law said that workers had the right to form labor unions. The

law allowed leaders of labor unions to bargain with the employer. They could bargain for better wages and better working conditions. The law helped labor unions to grow larger and larger. In the next six years, unions in Hawaii grew to 10,000 workers.

These united workers forced sugar planters to give them higher wages and better working conditions. Dock workers and other workers in cities formed unions.

The labor movement in Hawaii spread the idea of brotherhood throughout the islands. Now all men are paid the same for doing the same work.

THE HAWAIIAN ECONOMY IN WAR AND PEACE

World War II and After

The United States government became the big employer in Hawaii during World War II. On Sunday, December 7, 1941, Japanese airplanes attacked Pearl Harbor without warning. Pearl Harbor was the main base for United States Navy ships in the Pacific.

During the war, military officers took charge of the government of Hawaii.

One out of three workers in Hawaii worked for the military services. Thousands of servicemen moved in and out of Hawaii.

The United States government bought goods and services in Hawaii. It paid civilians who worked on the military bases. It paid the servicemen. All this money was spent in Hawaii. The economy of the islands was very prosperous.

But the war ended in 1945, and everything changed. The government of Hawaii was given back to civilians. Most of the servicemen left Hawaii. Government war spending stopped. Many people's income was cut off. People had to find different ways to earn income. The economy became weaker.

During the Korean War and the Vietnam War, the same thing happened. Government spending increased when the wars were "hot." Government spending decreased during peaceful periods.

Tourism

Hawaii had to find other ways to bring in money. One way was to encourage tourists to visit. The government and businesses sent out posters. They showed the beautiful beaches and mountains of Hawaii. The posters invited people from the mainland to spend a vacation in Hawaii. Thousands of vacationers did so. They continue to come to the islands. Today they can fly there from California in less than five hours, at very reasonable rates.

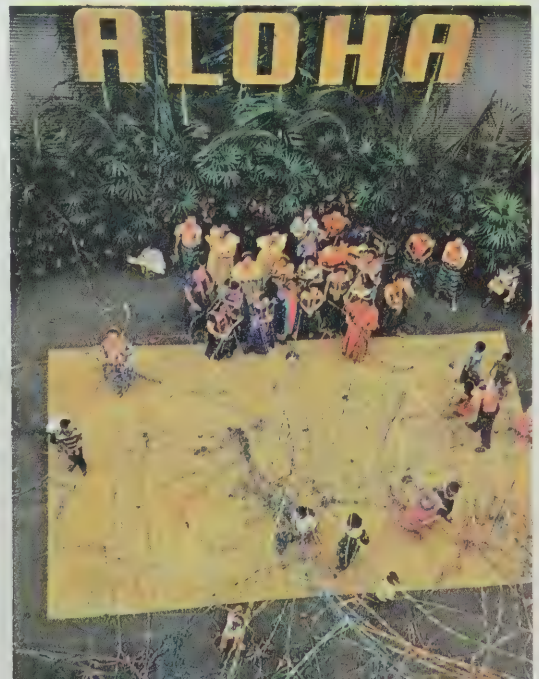
Tourists need hotels. They need services. The Big Five companies put their savings into the tourist industry. They started building hotels, housing projects, shopping centers. Tourism increased in 1959, when Hawaii became

the 50th state in the U.S. The Big Five investments were paying off.

In 1960, Hawaii got more income from tourists than from the sale of sugar. Since then, the income from tourism has grown steadily.

The money that tourists spend helps pay the wages of construction workers who build giant hotels. Tourists create income for stores and restaurants. Tourists create income for cooks, bellboys, and maids. Tourists create income for musicians and dancers who entertain visitors. Tourists create more income for taxis, car rental agencies, ships, and airplanes. All this income helps create more income for the government. The government collects taxes from all the people who serve tourists.

Hawaiians greet visitors with flowers, streamers, and music. The word *aloha* means "hello," "goodbye," and "love."



HAWAII'S PROBLEMS

Sugar and Pineapple Industries

Rising Cost of Land When many people want to use the same land the price goes up. More and more businesses are being built on the land. Hawaiian land has grown very expensive.

Since land is expensive, sugar producers want to grow as much sugarcane on as little land as possible. In Hawaii, an acre of land already produces more than eleven tons of sugar. This is more per acre than anywhere else in the world. But if the price of land keeps rising, Hawaiians must find ways to produce still more.

Rising Cost of Labor Many laborers on sugar plantations have been replaced by machines. But those workers who are still needed get good wages. They are skilled workers. They get medical care, vacations, and holidays. The labor unions helped bring the benefits to the workers. These benefits increase the price of labor.

Changing Price of Sugar The price of sugar goes up and down. The faster the price changes, the greater the risk to the sugar producer. This is because

the producer cannot change the amount of sugar production quickly. It takes two years to grow a crop of sugarcane. If the price of sugar suddenly falls too low, it is too late to cut the amount planted. The producer is helpless. So sugar producers all over the world want to keep sugar prices more steady.

The United States government helps set the price that United States producers can get for their sugar. Thousands of farmers in the United States raise sugarcane or sugar beets. These sugar producers asked the government to help keep the price of sugar steady.

The government made laws about how much cane sugar and beet sugar can be produced. It made laws about how much sugar can be brought into the United States from other countries. It placed a tax on sugar brought into the United States from other countries.

Countries that produce sugar have made several agreements. These agreements say how much sugar each country can sell each year. They say where they can sell it. So far, this has kept sugar prices fairly steady.

Competition Pineapple Faces A few years ago, Hawaii produced five out of every ten of the world's cans of pine-

apple. Now Hawaii produces about four out of every ten cans of pineapple. Hawaii has not cut the amount of pineapples produced. Other parts of the world are producing more.

Taiwan and Malaysia produce large crops of pineapple. Both land and labor cost less there, so pineapple can be produced at less cost in these countries than in Hawaii. And in Hawaii, the cost of raising pineapple is still rising. This is because the cost of land and labor is rising in Hawaii.

It is hard to lower the cost of producing pineapple in Hawaii. Most pineapple plants are planted by hand. They are picked by hand. But pineapples do not ripen at the same time. So each field must be harvested several times.

Scientists hope to develop pineapples that are all the same size and all ripen at the same time. Then perhaps machines could be used to harvest them. Meanwhile, the pineapple production in Hawaii may fall.

Loss of Military Spending

Military spending is an important source of income for Hawaii. But what about its future? Military spending depends on world conditions. If there is a threat of war, the government increases military spending in Hawaii.

If, however, the threat of war ceases, military spending can be cut quickly

and unexpectedly. Military bases can close down. Then the businesses of Hawaii will suffer. There is also another reason for worry. Large military bases are no longer needed for some new military weapons. Weapons like missiles are operated by remote control. Only a few men are needed to push the button or pull the lever that fires the weapons.

More and more push-button weapons are now placed underground or on ocean ships. So Hawaii may become less important as a military base. This will cause businesses in Hawaii to suffer.

Rising Cost of Tourism

Many people in Hawaii fear that tourism has become a mixed blessing. They fear it may benefit Hawaii less than people think. A lot of income from tourists is spent on services for tourists. Roads, water systems, and sewage systems must be built. These cost money. Hawaii may spend more money providing services for tourists than it can earn from them. Some tourists stay only a short time. Some spend very little money. They may not spend enough to pay for the additional services Hawaii has provided. Also, if Hawaii becomes crowded with lots of tourists who spend little money, those who do have money may be unhappy. They may go elsewhere for their vacations.



In the days of the first missionaries, Honolulu looked like this. It was little more than a village of grass-roofed houses and palm trees. But as traders and whalers came, the city began to grow.

Some specialists worry that tourism may destroy Hawaii. People come to the islands because of their unspoiled beauty. But what if giant tourist hotels and shops rise all over the country? What if new highways cover the land? What if cities and factories spread everywhere? Will people still want to come to Hawaii? Hopefully, Hawaiians will be wise enough to protect the natural beauty of Hawaii. Hopefully, Hawaiian children will be able to enjoy the islands in the years to come.

Limited Manufacturing

Factories need raw materials, workers, energy, a large market, and savings. Hawaii has few of these.

There are few skilled workers who are unemployed in Hawaii. There are more skilled jobs than people.

Factories need energy, but Hawaii has no coal or oil. It is expensive to ship fuel to Hawaii.

There isn't a large enough market for most factories. Hawaii has less than



Today Honolulu is a large city. About 650,000 people live in its metropolitan area. Many more visit the city each year. Tall office buildings and hotels line the beaches where palm groves once stood.

a million people. Transporting goods to the mainland is expensive.

There are not enough savings in Hawaii to open new businesses or for old ones to expand. Savings do not stay in Hawaii. Many of the owners of businesses live on the mainland. Much of the business profits goes to the mainland.

Still, there is a small market for Hawaiian goods growing on the islands. The market is growing because the population of Hawaii is growing. Many young people come to the islands. There

are tourists. The government still brings military men to Hawaii. These people make a market for goods produced in Hawaii. This market is a *protected market*. Producers on the mainland do not ship their goods to Hawaii. It costs too much. So they do not enter this market. It is protected for local businessmen.

Some factories in Hawaii process food for sale in Hawaii. Some factories manufacture clothing. At least part of these profits stays in Hawaii.

HAWAII'S INCOME

Every country must trade to live. By its export of goods and services it earns income. With this, it buys goods and services it cannot produce at home.

Hawaiian Goods

The most important goods that Hawaii exports are: sugar, pineapples, macadamia nuts, papayas, and coffee. The islands export tropical flowers, like orchids. The islands also export shirts and dresses of Hawaiian design.

Hawaiian Services

Hawaii has new and unusual services to offer.

Scientific Research Hawaii has a big university and many libraries where scholars and scientists meet. The university trains ocean scientists. What better place to study the ocean than near Hawaii. The water is clear. There are few storms. Ocean research can be carried on all year long.

Scientists study the plant and animal life of the sea. They have underwater laboratories. They seek better ways to use the riches of the sea. They look for ways to feed the growing population of the world.

Hawaii is also a good place to study the sky. The world's highest observa-

tory is being built on *Mauna Kea* [MOU-nah KAY-ah]. In the clean air of the high mountains, scientists study the stars.

Banks and Business Services To some people, Hawaii is the center of the Pacific world. There are some Hawaiian banks and businesses that serve as financial agents for many countries. The interest and profit from these services create income for Hawaii.

Free Port Services Part of the port of Honolulu has been made a free port. A *free port* is one where ocean ships from all over the world may unload all their goods without paying a tax. No import tax is charged on goods going in or out of a free port. A tax is charged only if the goods are bought by someone in Hawaii or the mainland. Goods may be stored in warehouses there. Raw materials can be processed into finished goods there.

There is an exhibition center in the free port. Merchants can examine the goods on display. They can buy goods from different countries. Buyers and sellers from all over the world meet there. Merchants from different countries discuss trade problems there.

The free port creates jobs and income for many people in Hawaii.

PLANS FOR HAWAII'S FUTURE

For the first time in the history of our country, the people of a state decided what kind of state they wanted. They decided on the kind of life they wanted.

First of all, experts studied the islands. They looked at the ways people live now. They studied the trends and changes that would probably take place. From their study, they were able to determine the kind of life that Hawaiians would probably be living in twenty years. They determined how many people would be young, how many rich, how many old, and how many poor.

The planners also determined what most people would be doing for a living and how many would be unemployed.

The people of Hawaii studied these findings. Then they asked themselves questions. Is this what we want to become? Is this what we want our region to be like in twenty years? If not, we must decide what we do want the region to be like.

What the People Want

In 1965, the governor of Hawaii called for a meeting of groups representing all walks of life in Hawaii. Representatives of businessmen and farmers came to the meeting. So did representatives of bankers, factory workers, teachers,

merchants, and students. There were representatives for Japanese, Chinese, native Hawaiians, and the Filipinos. Then the representatives of the different groups came together. They exchanged ideas.

Of course they didn't have the same ideas. Some groups wanted one thing. Other groups wanted another. Their goals were different. Their wishes were different. But they tried to understand the other groups' point of view.

After much talk the people of Hawaii agreed on the following wishes:

- Hawaii's beauty is its most important resource, and must be protected.
- The fertile land should be kept for farming.
- Some land should be reserved for parks and gardens.
- Some land that contains the sources of a good water supply should be protected.
- Some land should be protected for forests. Forests would also help control floods.
- Cities should be arranged so that each family feels it is part of a neighborhood. Each neighborhood should have schools, stores, and community centers.
- There should be jobs and good incomes.

- There should be a good transportation system.
- There should be low-cost housing.
- Good health care should be provided.
- There should be a good educational system.
- The different ways of living in Hawaii should be encouraged and protected. Differences make the state more interesting.

Balancing Wishes

What a job it is to balance wishes! It is impossible for every wish to be satisfied completely. Many people may have to be satisfied with less than they wished.

For example, some people may want to bring new businesses and factories to a region. They will take up lots of land. But farmers may want more farmland. Nature lovers don't want factories destroying nature's beauty and spreading pollution.

People who work in different businesses have different goals and wishes. Florists do not have the same business goals as highway builders. Can you think why they might not agree?

Planners try to satisfy as many people as possible. This is very difficult to do. Every wish affects every other wish. To grant one wish may make another impossible to grant.

The Master Plan

Planners are moving toward a master plan. The master plan tells the people what must be done now and in the future. Some states are planning five years ahead. Some plan for twenty years ahead.

All plans are restudied all the time. People's wishes change. The world is changing around them. Planners must be sure the plan keeps up with the changes.

Hawaii is thinking ahead. It was the first state to make an overall blueprint for the future. Other states would do well to follow its example.

Test Yourself

1. In what ways did the arrival of foreigners change the lives of most Hawaiians?
2. How did the missionaries from New England work to help the Hawaiians?
3. How were the "Big Five" able to gain control of so much business in Hawaii?
4. Explain why the economy of Hawaii prospered during World War II.
5. Why is tourism a growing industry in Hawaii? Why do some people think tourism is a "mixed blessing"?

HOW PINEAPPLE GETS INTO A CAN



The weather in Hawaii is warm all the year round. The sun shines brightly on most days, but there is plenty of rain, too. This *tropical* climate is ideal for growing pineapples. About seven out of every ten pineapples eaten in the United States come from Hawaii.

Pineapples are very unusual plants. For example, pineapples do not grow from seeds as many other fruits do. Instead, the pineapples grow from *slips*. The pineapple slip is the green bottom part of the plant which cannot be eaten.

The slips are placed 18 to 36 inches apart (2). This gives the pineapples room to grow. The plants are arranged in even, curving rows (3). Planting in curved rows helps to keep soil from being washed away by rain. This kind of planting is called *contour planting*.





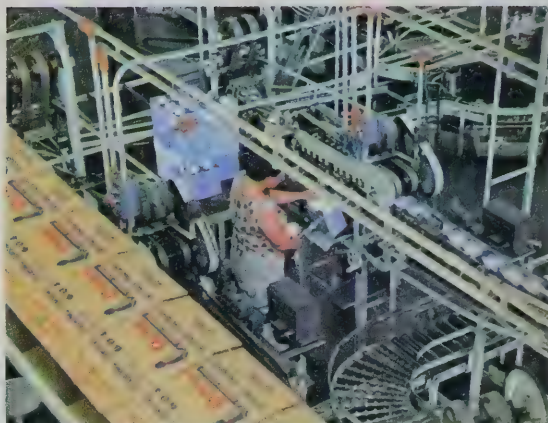
After planting, the fields must be cared for. Water and fertilizers enrich the soil. This helps the plants grow. Chemicals are sprayed on the fields to protect the crop from insects and disease.

Pineapples grow and ripen very slowly. A year and a half may pass before a plant is ready for harvesting. But all pineapples do not grow at the same rate. Some may be ripe months before others. So pineapples must be picked by hand. Workers pick only those pineapples which are ripe (4).



After harvesting, the pineapples are rushed to the cannery. Speed is important because ripe pineapples can spoil very quickly. In the past, this meant that only people who lived near pineapple plantations could have pineapple to eat. But today, modern methods and machines make pineapples available to almost everyone.

One of these modern machines is the Ginaca peeling machine (5). It is named for Henry Ginaca, the man who invented it. Before this invention, the tough pineapple skins were peeled by hand. This took many workers and a lot of time. But Ginaca's machines can peel hundreds of pineapples every minute.



Other machines slice the peeled pineapples neatly. The sliced fruit is cleaned and hurried to the packers (6). These are skilled workers who inspect each slice and choose the best ones for canning.

Finally, other machines quickly seal the fresh pineapple and pineapple juice into airtight cans (7). Now the fruit will not spoil. It can be shipped anywhere in the world for people to enjoy (8).



WHAT DID YOU LEARN?

1. In what ways does a political region differ from the other types of regions you have been reading about?

2. Alaska has been called “the last frontier in America.” What do you think this means?

3. Hawaii was the first of our states to prepare a blueprint for the future. Why do you think this was so important to the people of Hawaii?

4. Make a list of some of the most important things a region needs to become prosperous. Then decide how many of those ingredients are present in each of the three regions you have just studied.

5. California, Alaska, and Hawaii have several things in common. One is that their people come from a variety of cultural backgrounds. In what ways do you think this is good for a region? In what ways might it cause problems?

6. Why do you think that the tourist business is good for an area? Can you think of any reasons why tourism might not be good for an area?

7. Read the following statements. Then decide whether you agree or disagree with each one of them. Make sure you have reasons for your opinion.

a) California’s population should be limited by state law.

b) Alaskans have more in common with Canadians than with Americans. Alaska should really be part of Canada.

c) Hawaii should prohibit all new businesses which do not contribute to the tourist industry.





Unit Five

REGIONS MADE BY PROBLEMS

The United States is one of the richest countries in the world. We used to think that if the country was rich, everyone benefited. We thought that if one part of the country prospered, all of it prospered. We know now that this is not true. Regions do not progress and prosper equally.

Some regions are like magnets. They have resources. They draw businessmen to them. Industries develop in those regions. Industries attract workers who earn incomes. Their incomes are spent on goods and services within the region. More businessmen become interested. Savings flow into the region, and it becomes wealthy. Wealth attracts more wealth, and the region grows.

But some regions are not like this. They do not attract wealth. They do not grow or prosper. They may get left behind.

Left: Coal slag, Kentucky



Chapter 11

Appalachia: A Region Left Behind

A man walks slowly down the bare hillside. He moves toward the little town in the valley. He tries not to stumble over the gullies in the hillside. Rich soil once covered the hill. But it was washed away long ago.

The man passes a row of deserted houses. Their tar-paper roofs are sagging. The chimneys have crumbled. The porches have rotted.

The mountaineer comes closer to town. He passes a dump. Paper, cans, bottles, and wrecked cars lie in a ditch. No grass grows along the banks. Day and night the open dump smolders. Black smoke drifts across the countryside. The smell is terrible.

The mountaineer enters the little town and walks to the courthouse. He has been called to court because his children have not been going to school. Why did this man keep his children out of school? He walks up to the judge and says, "Judge, my children have not been going to school. But nobody wants them to go more than I do.

"You know me, Judge, I'm a miner. I've been a miner for 22 years. But there's been no work for me in the mines for these past four years. I've looked for work in every town and every mine in east Kentucky.

Left: House in a hollow, Kentucky

“All I know how to do is dig coal. I can hardly read. I can just barely write my name. Nobody wants to hire a man like me, even when there is a job.

I sold my old car, my shotgun, my radio, and my watch to get money to feed my family. I’m dead broke and about ready to give up.

“I own a little old four-room shanty of a house and 20 acres of wornout hillside land. A coal company owns the coal under my land. Last spring they mined it, and that ruined the land. I can’t grow anything on it now. I couldn’t sell the whole place for \$500 if my life depended on it.

“If it wasn’t for the food the government gives us, I guess we’d all have starved to death by now. You can fine me for keeping my kids out of school, but I don’t have a penny. I couldn’t very well send them to school with no decent clothes or shoes, could I?

“If putting me in jail will help my family, then go and do it. If anybody could find me a job so I could work and get something ahead for my kids, I’d be much obliged.”

The little courtroom is silent. What can the judge say? What can anyone say? What hope can they offer?

The story you just read could have happened almost anywhere in the Appalachian region. The Appalachian region starts in northern Mississippi and Alabama. It runs right up to southern New York State. Since most—but not all—of the region is covered by the Appalachian Mountains, the region is called Appalachia.

On the east side of the Appalachian Mountains is the manufacturing region of the East Coast. On the west side is the rich region of the Midwest. But Appalachia, in between, does not share in their growth and prosperity.



WHAT IS WRONG IN APPALACHIA?

There are several steps in studying a problem—any problem—and in trying to solve it. First, we must see if a real problem exists.

Signs of a Problem

How can we tell if there is a problem in Appalachia? There are many signs.

Few Jobs Few people in the region have jobs, especially in the mining area.

Many of the mines have been closed. The people have nothing to do. They just sit sadly on their porches. They have no money. They have no way of moving out of the region.

Poor Farms The farms are poor and barren. The soil is poor, and crops are few. One farm produces hardly enough corn to feed a family. There is nothing left over to sell.



Appalachia's problems are many. They can be seen in the polluted streams. Some are red with mine acid. Others are choked with garbage or mud.

The region's problems also show in rundown buildings and dying towns. There are few jobs in these towns. And there are few young people. More and more young people are moving away. In some towns, mostly old people remain.



Overcut Forests Most of the region's once valuable forests are gone. The timber was cut to clear land for farms. It was also used to prop up mine tunnels. Now great areas are empty of trees. They are covered only by small bushes.

Air and Water Pollution The air is polluted. Deep down in some old mines, fires have been raging for years. Smoke and gases come up through the ground and pollute the air.

In some places the streams are so full of acids from the mines that the water has turned orange.

Dying Towns Little market towns once thrived on business with the farmers. Each town had a few stores and a church. But when farmers could no longer make a living, they moved to the cities. Those who have stayed drive their cars to bigger towns to do their shopping. Now there is not enough business to keep the little towns alive.

Some towns were once busy railroad centers. Many men worked in the railroad repair shops. But today, few trains stop there. The towns have lost business.

Few Young People In this region there are more old people than young ones. Although the young people love the mountains, they leave them as soon

as they finish high school. Many leave before that. They go to the big cities to find jobs. This area is called a *depressed area*, or poor region. Yet, not all parts of it are poor. Big highways are being built across the mountains. Some cities inside the region are busy and prosperous. Some of these cities are Charleston and Wheeling, West Virginia; Birmingham, Alabama; Knoxville and Chattanooga, Tennessee.

People in these cities have good incomes. There are big industries, and fine stores, and good schools in these cities. But the wealth stays inside them. It does not spread into the countryside.

Defining the Problem

Now we know the symptoms of what is wrong in the region. Next, we must define the problem. What is it?

The problem is, **How can we bring jobs, income, and living conditions in Appalachia up to the standard of the rest of the country?**

Many people feel that those in need should be helped no matter where they live. The people of Appalachia are not poor because they are lazy or stupid. They are poor simply because they were born in a region that is no longer a marketplace for goods and ideas.

The families in the region need more choices of jobs and incomes. How can their incomes and the number of jobs be increased?

Comparing Incomes and Spending

	Average in Appalachia	Average in other parts of the United States
Average weekly income for:		
Factory Worker	\$121.82	\$141.65
Mining Worker	144.83	166.47
Store Worker	70.18	85.58
Average yearly income for Farmers	\$3,330.00	\$7,265.00
Average yearly spending for services and entertainment	\$219.00	\$474.00

Causes of the Problem

Mountains Limit Growth Mountains have a lot to do with how people live and where they live. In many parts of Appalachia, the mountains are steep and the valleys are narrow. The sun rises later and sets earlier than it does elsewhere. The mountains hide the sun from the fields. The growing time for crops is short.

Where the mountains are steep and the valleys narrow, towns do not grow. Houses line the dusty roads leading into the hills. But the houses are scattered. There is no town. There is no town hall. There is no water system or sewage system. There are no streets or sidewalks. There is no library, no hospital, no hotel. There are no shops.

How Big Is the Problem?

The size of the problem can be measured in different ways:

- In the region there are 3,500,000 workers seeking work, but there are only 3,000,000 jobs.
- Weekly wages in Appalachia are lower than in other parts of the country.
- Farm income from sale of farm products are lower in Appalachia than elsewhere.
- Poor families in Appalachia have little to spend for extras after buying food, clothing, and shelter.

Now that we know how big the problem is, what are its causes?

Mountain Land Is Hard to Farm The mountain farmers of Appalachia cannot produce enough crops to earn a decent income. One reason for the small crops is the erosion of the soil over many years.

It all started when the first European settlers arrived about 200 years ago. They knew little about farming. They came from the cities of Ireland, Scotland, and England.

When they arrived in America, most of them worked on the plantations along the coast. They learned to grow corn and tobacco. But then, some of them

chose to move west into the mountains. They settled in the narrow valleys and the highlands of Appalachia.

They tried to farm just as they farmed on the coast. When they plowed their fields on the mountainsides, the trouble began. Hard rains started to wash the soil off the mountain. But the people did not know how to stop it. So the soil was washed away. The crops got smaller.

Coal Mining Ruined Farm Land For a long time, one of the most important raw materials in our country was coal. Most of it was mined in the Appalachian Region. These mines once supplied seven out of every ten tons of soft coal mined in America.

Coal-mining companies paid farmers for the right to mine the coal lying under their land. They paid about one dollar an acre for this right. And they got the right to do it forever!

Then the companies began to do a new kind of mining. It was called strip mining. Bulldozers scraped away thousands of acres of top soil. Then huge machines gouged out the beds of coal that lay beneath the surface.

When the coal had been removed, the strip miners moved on. But they left a ruined land behind them. Plants could not grow. No roots held the soil, so rain washed mud into the streams. Acid from coal also polluted the water.

In the past, coal companies did not pay for the damage they did. Today, some states have passed laws to make the companies pay. But it still takes many years to repair the damaged land.

Mine Owners Are “Absentees” Most of the minowners do not live in the mining region. They are *absentee owners*. They do not have as big a stake in the area as the people who live there. They do not spend profits in the region.

The mining companies pay little or no taxes to the states where they mine coal. So the city and state governments in the region do not have enough income. They cannot build roads, schools, and water systems. Furthermore, coal mining has damaged the countryside so badly that businessmen will not come to the region.

Mining Is Unsteady and Dangerous Work Many farmers and their sons became coal miners. Jobs in mines, however, were not steady. When coal was in great demand, miners worked. But, since the 1920s, coal has been replaced by other sources of power—gas, oil, electricity. Coal miners lost their jobs and their income. Miners then hoped that new customers for coal could be found. A few were found. Today, coal is shipped to Japan. But there isn't enough coal sold to bring many miners back to work.



Underground miners like these still work in many places in Appalachia. But more and more coal is being mined above the ground by strip miners. Strip mining requires fewer workers. Also new machines can do the work of many men. So thousands of underground miners have lost their jobs. Many mines have closed. Behind them remain slag heaps, dirty water, and dangerous mine shafts.



Coal mining is also dangerous. Many miners have been killed in cave-ins, explosions, and fires. Many have died because coal dust settled in their lungs. Many have been crippled and unable to support their families.

Forests Were Used Unwisely Appalachian forests were once the finest hardwood forests in the world. Giant oaks, tulip trees, walnuts, and sycamores grew along the rivers. Mountainsides were covered with sugar maples, silvery beech, and yellow birches. There were also hickory, ash, and cherry trees.

The first settlers from Europe cleared away many of the big trees to build their cabins and make room for cornfields. Other settlers came and cleared more forests to graze cattle. Thousands of acres of timberland were destroyed.

Then came the big logging companies. By 1910, they had cut out half of the old hardwood forest. They left only those trees that they could not reach easily.

Today, nearly three-fourths of the forest land is owned by farmers. Farmers don't have enough money to manage their forests. Specialists say that every dollar's worth of lumber cut in the region is worth \$25 by the time it gets to the customer. But less than \$10 of the \$25 is earned by the unskilled workers of Appalachia who cut down the trees. They just sell the standing

trees to lumber companies to get cash, and they usually sell at a low price.

Poor Education, Poor Health In 1960, about a million and a half people in Appalachia could not read or write. That is, one person out of every fifteen. In two of the states in Appalachia, one out of every four persons could not read or write.

In 1960, in some states in Appalachia, two children out of ten graduated from high school. People without good educations cannot get jobs with good pay. So they are caught in poverty.

In this region, more people get tuberculosis and typhoid fever than in other parts of the United States. Poor people get sick easily, and they stay sick longer than people who can get medical care.

In Appalachia, there aren't enough nurses, doctors, or hospitals. In 1960, there were only 94 doctors to take care of every 100,000 people. In the rest of the United States, there were 141 doctors for every 100,000 persons.

Mountain People Get Set in Their Ways

Life has been very hard for most of the people in Appalachia. No matter how hard farmers work, their farms do not produce much. Miners know fear, and danger, and pain.

There is so much pain and misery in their lives that these people have come to believe that nothing could be

changed. It was as if they said, "Life is terrible. But we can't do anything about it." They stopped trying to plan for the future.

They get little news from the outside world. There is no one to question their ideas. They do the same things the same way over and over again. Girls do as

their mothers did. Boys do as their fathers did. They rarely ask why. None of them like changes.

In the valleys and hollows of Appalachia, the people are locked into their own way of thinking. The world is changing around them. But they don't know it.

WHAT IS THE SOLUTION?

Volunteers with Good Ideas

For many years, volunteers have helped the people of the region. Churches send groups of people into the mountains. They build churches and schools. They give clothing and food to the people. They try to help them solve their problems. These volunteers work hard. They encourage people in other regions to help.

Volunteers also run craft centers in the region. Here, the old mountain crafts are kept alive. Students learn how to weave and make baskets. They learn to carve wood and make furniture. Their work is sold all over the country.

An organization called Save the Children Federation sends workers into the Appalachian region. It gives money to mountain schools so that the chil-

dren can work on projects to improve the school. It also gives away clothing.

United Mine Workers This miner's union built ten hospitals throughout the region. The mineowners paid the union forty cents for every ton of coal the miners mined. This money was used to build the hospitals.

The ten hospitals no longer belong to the United Mine Workers. Today they are nonprofit hospitals, and they are open to everyone in the region.

Summer Volunteers Every summer, hundreds of college students work with the mountain people of the region. The students are called the Appalachian Volunteers. They help repair the one-room and two-room schoolhouses. They make baseball fields and basketball

courts. They teach summer school there. Most important, they teach the mountain people to work together to solve their problems.

Council of the Southern Mountains

Almost all volunteers in the Appalachian Mountains belong to the same

organization. It is called the Council of the Southern Mountains. The members meet to exchange ideas. They publish magazines and reports. They get money from foundations and from the United States government to study the needs of the people. They find volunteers to work on projects.

It takes time and skill and care to make a cup or a quilt by hand. The potter and the quiltmaker below are making things for their own families to use. But crafts are also helping some Appalachians earn money. These women (bottom) are part of a sewing cooperative. It was organized by volunteer workers.





Strip mining leaves the earth barren and lifeless. But the land can be reclaimed. Five years of careful planting and fertilizing produced the young forest at right. The land was once a strip mine.

State Governments Cooperate

Volunteers do not have enough money or power to deal with all the problems. Some problems are too big.

The job is too big even for one state. The states of Appalachia and the federal government must work together on the problems. They are doing so.

In 1960, the governors of the 13 states in the Appalachian Region met. They decided to work together on the following plans:

Repair of Land The governors thought that tax money should be used

to repair the land damaged by farming, lumbering, and mining. Better farming methods should be taught. Farmers should learn what crops can grow best on their land. They should also learn how to use their woodlands wisely.

Abandoned coal mines must be filled up and sealed. Underground mine fires must be put out. Old waste fires must also be put out. Land scarred by strip-mining should be repaired.

Water Control The United States Army Corps of Engineers was asked to study the river systems of Appalachia. The engineers will suggest the best way to control and clean the rivers.



Members of the Frontier Nursing Service drive far back in the hills to give medical aid. The service was founded many years ago to help mothers and infants. Today, it offers all kinds of medical care.

Better Transportation The region needs to be connected to the rest of the country. Wide four-lane highways are needed. Good smaller roads should connect the towns and small communities to the highways. This network of roads is necessary before businesses and factories can open in the region. The governors agreed not to fight each other in getting federal money for their states to build roads. They also agreed that airports should be built near the towns most likely to grow into big cities.

Good Health Services The governors agreed that the region needs two kinds of health care. It needs doctors, nurses,

and hospitals. It also needs help in preventing sickness.

People have to be taught the importance of being clean. They must be taught which foods are best for keeping healthy.

Sewage should not be dumped into streams. People have to learn how to keep from polluting the streams. The governors think that the United States government might help towns build sewage disposal systems.

Better Houses The governors said that the federal government should make loans to the city and county governments and to church groups. These

groups could then lend this money to poor people to replace their houses. A survey showed that one out of every four families in this region lives in an unsafe house. In some counties, nine out of ten families live in unsafe houses.

Better Schools The governors agreed that the schools of the region must be improved. If people in Appalachia have good educations, they can choose the kind of work they want and the place where they want to work.

The Appalachian Regional Development Act

In 1964, the governors sent their ideas to the president of the United States. They asked him to ask Congress to pass a law to help the region.

First, a bill was written. The bill said what the government should do about the region. It was then presented to Congress.

A year later, the act was passed. It is called the Appalachian Regional Development Act.

This act gave the 13 states the right to form a special government. The name of the government is the Appalachian Regional Commission. This commission enables the 13 governors to work together to make life better for the people of the region. They decided to include in this region all of West

Virginia and the depressed parts of the Appalachian states as far as New York. They also included parts of Mississippi and Ohio.

The work of the commission was supported by money collected from taxes.

The Commission Has Critics

Not everyone agrees that the commission's plans are the best way to solve the problems. Some say that tax money should be given to towns. This would create jobs and attract people into towns and cities from the surrounding countryside.

Many children drop out of school in Appalachia. This harms the region. A sign in Kentucky asks students to stay in school.



Others say it would be better to urge people to leave the region. They should be helped to move to any place in the United States where there are jobs.

Still others disagree. They ask why these people must move from their homes. Why must they leave the places where their fathers and their grandfathers lived?

Some believe that tax money should not be spent on making better farms in the mountain areas. They say that the country doesn't need any more farms. Farmers in other parts of the country produce too much anyway. They feel that Appalachian farm land should be turned back to forests.

Critics of the commission think too much money is being spent on highways. They claim that 70 cents out of every dollar is being spent on roads. They believe tax money should be spent on schools instead.

Some people say it is almost a hopeless job to improve the region. They think the government should give the people of Appalachia enough income so that they could remain there. The area would remain a "living museum."

Some people complain that only the federal government is providing tax money to improve the area. The critics say that the money should come from mining and lumber companies, as well. They should pay higher taxes directly

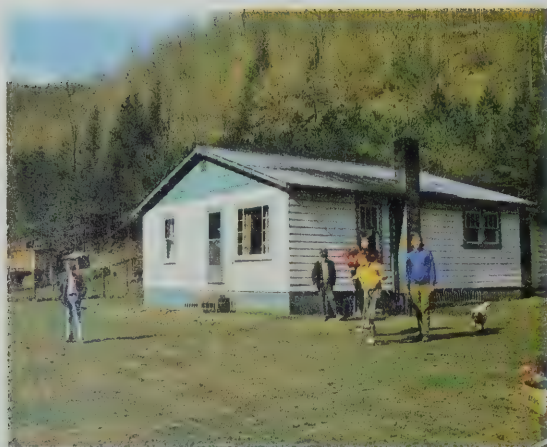
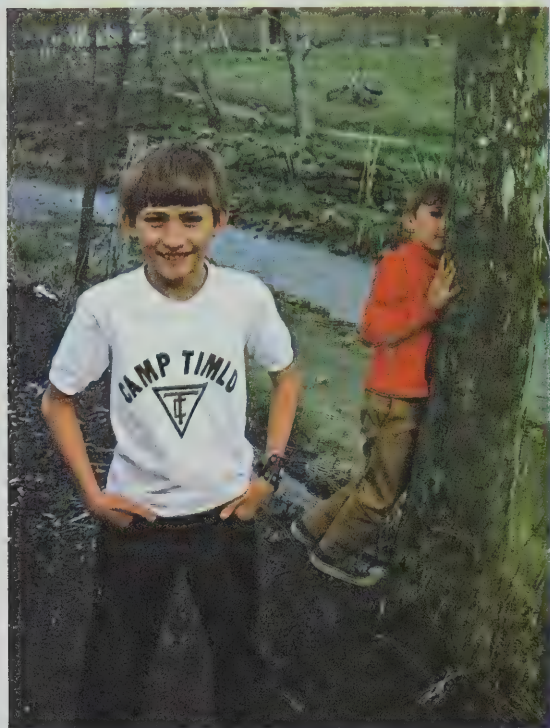
to the states in which they operate. Others reply that if these companies have to pay higher taxes, they will simply charge more for lumber and coal. This will not help the poor people of the region. They will just have to pay higher prices.

All these ideas have been discussed by the leaders of the Appalachian region. Some of the ideas will be tried out. By the time you grow up, you can see which of the ideas worked and which did not. You may even have some ideas of your own. These ideas may make the Appalachian region, and our whole country, a better place to live.

Test Yourself

1. Describe some of the signs of Appalachia's problems.
2. In what ways can mountains limit the growth of an area?
3. How did the mining of coal damage the land in Appalachia?
4. What are some of the goals of the Appalachian Regional Commission?
5. What are some of the criticisms of using federal tax money to improve the Appalachian region?

GROWING UP IN APPALACHIA



This is me, Nolan Roark. Behind the tree, that's my brother Anthony. Anthony is kind of shy about having his picture taken. I think Mother is, too. But not me and Daddy! Look at those grins!

That little stream behind me and Anthony is King's Creek. It runs right through our land into a bigger creek called Big Cowan.

Here in eastern Kentucky, there are lots of creeks and streams between the mountains. People can't build houses on the mountainsides. So they live near the creeks, in what we call the *hollows*. Our house is in Big Cowan hollow.

The hollow is a nice place to live. I guess I know just about everybody who lives along Big Cowan Creek. I have a lot of friends in Kingdom Come hollow, too. That's where I go to school.

On weekends this spring, Daddy is teaching me how to plow. I'll tell you one thing, it's not as easy as it looks. But we'll grow a lot of good vegetables on the plowed land.

Besides planting vegetables, we raise animals for food. We keep chickens for eggs, and pigs and rabbits for meat. Sometimes we go hunting, too. Here in the hills, you can't just run down to the grocery store every time you're hungry. You have to do things for yourself.

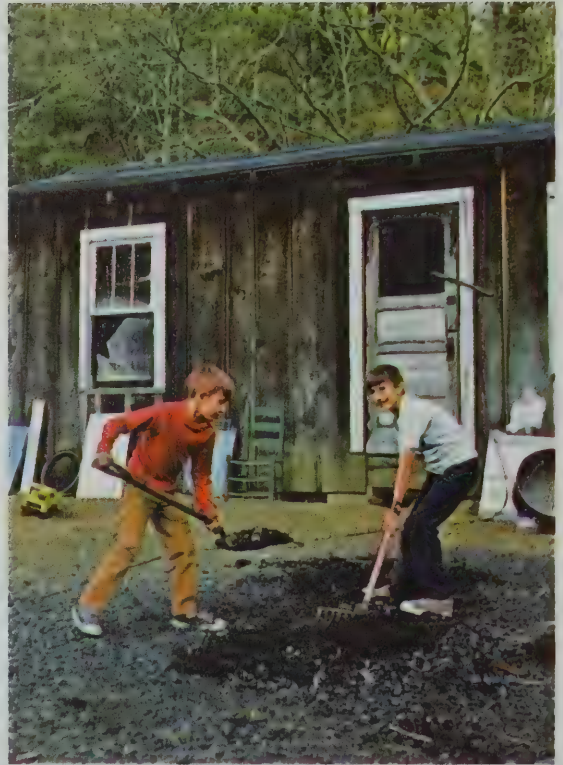


Anthony and I have a special chore. We bring in coal from the coal heap in our backyard. We burn it in a stove to keep the house warm. The coal is cheap, because we buy it straight from the mining company.

My Daddy used to work for a coal company. Then some of the mines closed down. A lot of miners and other people lost their jobs. Now Daddy has a new job. He works for the Community Center.

The Community Center was built by people here in the hollow. They wanted a place where everybody could come and play and have a good time. Daddy teaches us kids all kinds of games.

But we don't always go to the Center for fun. There's plenty of work to do. One job is to clean up the land in the hollow. I guess some people are just careless. They throw trash and empty bottles all over the countryside. So a lot of us get together and we all pick up the trash from our woods and creeks.



Daddy drives the big truck for us. That's another part of his new job. He and some other people helped buy the truck for the Community Center. They had to borrow money from a bank. But it was worth it. It helps us keep Big Cowan a really good place to live.

You know, sometimes on television or in the newspapers, people talk about Appalachia. They say that a lot of people here need jobs. They say that a lot of people are poor. And I guess that some of what they say is true.

But then I take a look around our hollow. The land is so beautiful, and people here love the land. They know how to take care of it. They take care of each other, too. They're proud to live here. And so am I.







Chapter 12

New England: Staying Up to Date

On a cold dark day in late November in the year 1620, an English sailing ship, the *Mayflower*, dropped anchor in the harbor inside Cape Cod Bay. On board were forty Pilgrims and sixty other people from England.

These settlers had to work hard to survive. The winters were cold. They had few tools. But they survived these hardships and established the first great region of the United States. These “Yankees” were smart and full of energy. They gave to the rest of the country many of their ideas on law, government, and religion.

Five of the six New England states share a long seacoast. It has many natural harbors. People settled close to the harbors. Towns were built near them, and transportation to them across the seas opened the towns to the rest of the world.

The thin, rocky soil of New England was not good for planting. But Yankee ideas helped to build New England into one of the great manufacturing regions. For years, the region prospered. But now, times are changing. Some industries have moved from New England to regions where labor is more plentiful and cheaper. Some remaining industries are old. They are not so efficient as newer factories in other regions.

New England is trying not to be left behind. Yankee ideas again are trying to solve the problems of the region.

Left: Downtown Boston, Massachusetts

THE FIRST NEW ENGLANDERS

Pilgrims

The forty Pilgrims who came to the New World were all poor. Their passage was paid by a trading company in London. They promised to pay their debt by working in the New World for the trading company. They promised to send back furs, lumber, or gold until they had paid off their debt.

The Pilgrims left England because they were in danger of being thrown into prison there. They did not like the rich services of the Church of England. They wanted to worship in their own more simple way. They would not bow to the powerful bishops of the church. They would not take orders from them. Instead, they turned their backs on England and came to America.

The other sixty people on the *Mayflower* were also poor. But they did not come to America for religious reasons. They came to find a new life. The new life might offer them some hope.

Before the passengers left the ship, the Pilgrim leaders signed a compact, or agreement. They agreed to set up a government. They promised to obey the just laws of that government. Thus was formed the government of Plymouth Colony.

That first winter was cold and terrible. Nearly half the settlers died. Only a few were well enough to hunt for food and care for the others. In the next few years, the settlement was close to starvation several times. But life finally became more enjoyable.

Friendly Indians taught the people at Plymouth Colony how to plant corn. In a few years, the settlers were growing enough corn to trade it with the Indians for furs. They sent the furs to the English trading company. This paid the costs of the trip to America. In this way, their debts were finally paid. The colonists then truly became free men.

The Massachusetts Bay Colony

In the next few years, about 20,000 more people left England to come to New England. In 1630, a large group brought with them a charter from the king of England. This charter permitted them to establish the Massachusetts Bay Colony.

These settlers were called *Puritans*. Most of them were wealthy and educated. The Puritans had hoped to stay in England. But they wanted to “purify” the Church of England. They wanted



The Puritans survived hard early years in villages like this one.

to take away its complicated services. They wanted the church to be less interested in power and money.

The Puritans found that they could not change the church. The clergy were too strong. So, they decided to separate from the Church of England. They set up their own church in the New World.

The governor of the colony, John Winthrop, declared that they would build perfect communities in the New World. They would be run according to the laws in the Bible.

The Puritans came in large groups. Whole church congregations came.

Each congregation made its own settlement in the Massachusetts Bay Colony. Some of the towns they founded were Boston, Salem, Marblehead, and Cambridge.

Almost everyone owned his home and some land. The Puritans built their homes close together for protection against the Indians. Being close together, they could easily get to one meetinghouse. This meetinghouse served as both a church and a town hall.

At the edge of town, behind the houses, were the fields and common land. Everyone's sheep and cattle could graze on the common land. Everyone

in the town got his firewood and stones from the common land. In hard times, everyone shared food.

Puritan Beliefs

The Puritan way of life was based on some beliefs that influenced the entire nation. They still do to this day. What are some of those beliefs?

Man Can Govern Himself When the Puritans established a settlement, they chose their minister and church elders. They made the rules for the settlement. They did not need a central government in far-off London to make laws for them.

Men Must Obey Society's Rules The Puritans' rules were strict. Everyone had to go to church. It was against the law to work, play, or travel on Sunday. People who swore were whipped in public. Sometimes, as punishment, people had to sit in the *stocks*. This meant sitting with their feet and head stuck into holes in a wooden plank. It was not comfortable, and it was very embarrassing for lawbreakers because everyone could see their punishment.

The Puritans met in town meetings to solve their problems. Once a year, they met to elect town officers. In the town meetings, they discussed the town's problems. They judged and

punished people who were not living according to the town's rules.

God Loves a Hard Worker The Puritans thought people should work hard. They said that God rewarded the busy with riches. Idleness was a sin. Pride and rich living were also sinful.

Puritans thought that if people were poor, it was because they were weak or wicked. They did not have the blessings of God. God was also against those who were wasteful. Puritans believed that thrift and simple living were signs of the good life.

People Should Be Educated Education was important to the Puritans. They wanted everyone to be able to read. Then, everyone could read the Bible and study God's laws.

In 1636, the Puritans founded Harvard College. Here, Puritan ministers could be trained. Boston and Salem set up private schools also. A few years later, the Massachusetts Bay Colony passed laws on education. The laws said that all children should get an education or training for a trade. Towns with 50 families or more were told to set up elementary schools. Towns of 100 families or more had to set up schools for older children as well. Many world-famous schools still exist in New England.

HOW NEW ENGLANDERS LIVED

New England farm families had to work very hard. Trees had to be cleared from the land. Rocks lay everywhere. The soil was thin. The growing season was short. The climate was cold in the winter.

Farmers made their own shoes, clothing, furniture, and tools. They were dependent upon themselves for almost everything. It took all their efforts just to stay alive during the early days of the colony.

Trading: A Gate to the World

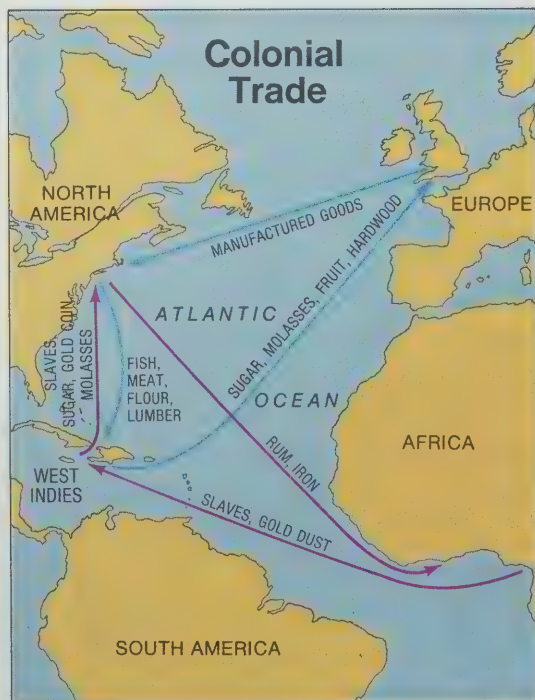
Things got better as the years passed. It was through trading that the people of New England began to lead more comfortable lives. Some trapped for furs. Others became traders in the towns. Others became sea captains.

If the soil of New England was poor, the sea off the shores was rich. It was rich in fish. There was enough to feed the settlers and to ship to other countries. Some New England families made fortunes from trading.

On their trading ships, they brought sugar and molasses back from the West Indies. Some New Englanders made rum from the molasses. The traders carried the rum to Africa and traded

it for slaves. Slaves were taken from Africa to the West Indies. In the West Indies, the New England traders exchanged the slaves for sugar, molasses, or gold. These they brought to New England.

In the 1700s, there were many changes in New England. Shipping and trading brought New England in touch with other parts of the world. Harvard College and the other schools of New England opened people's minds to new ideas. In the towns, printers



were printing and selling books, pamphlets, and newspapers. Libraries helped in the exchange of ideas and information.

A New Country

England thought that its colonies existed to serve the mother country. It wanted the American colonies to supply it with raw materials. These raw materials were to be turned into finished goods by factories in England. Then the English government wanted the colonies to buy the finished goods from the mother country. This would bring prosperity to the mother country, but not very much to the colonies.

England did not want American factories to compete with English factories. The English government passed laws against building factories in the colonies. It also refused to let American businessmen sell their goods where they pleased. American raw materials had to be sold to England, even though England did not pay the best price for the goods.

This made businessmen in the colonies furious. They wanted to sell their goods to the buyer who would pay the highest price. They wanted to become prosperous also.

England refused to understand the colonists' complaints. In fact, the government passed even more laws to dis-

courage colonial prosperity. Finally, the colonists could stand no more. In 1776, the colonies signed the Declaration of Independence. They declared that they were free from England.

War broke out between the colonies and England. After five years of fighting, the colonies won their independence. They united to form a new nation. It became the United States of America.

Sailing Ships and Trade Bring Wealth

After the war ended, England would not let the United States trade with the English colonies in the West Indies. So, New England traders had to look for new markets. They had to find new goods to sell.

A big New England sailing ship, the *Grand Turk*, sailed out of Salem for China. In those days, there was no Panama Canal. Ships were forced to go all the way around South America, and then all the way across the Pacific. Even so, New England traders found trade with China very profitable. Soon many New England ships followed the *Grand Turk*. In a few years, a fleet of 34 ships were sailing back and forth between Salem and China.

The *Neptune* was one of these ships. It carried a small mixed cargo and \$500 in gold coins. In the West Indies,

the captain traded for rum and sugar. In Brazil, he got sandalwood and other Brazilian goods. Off the southern tip of South America, the crew caught seal. Then they sailed west into the Pacific Ocean. In the South Sea Islands, they got pearls in exchange for cotton cloth and wire. The ship went on to China. There, the captain traded the sealskins and the rest of his cargo. In return he got tea, silk, lacquer work, fine china, and ivory.

The voyage lasted two and a half years. The *Neptune* returned with a cargo worth \$250,000.

New England trading ships sailed all over the world. Along the way, Yankee sea captains bargained for goods at many ports. They always sold their goods for a profit. Great profits were made in the sea trade. Shipping families built up big fortunes.

In England, officers on a ship usually came from wealthy or famous families. They did not have to work to achieve their positions. In New England, it was different. Men worked their way up to being an officer. Young boys went to sea as ordinary seamen. If they were intelligent and hardworking, they became sea captains. Many were captains before they were thirty. In ten years, they could retire as wealthy men.

Seaport towns like Salem, Boston, and Providence were lively places.

Longshoremen sang sea chanteys as they loaded the sailing ships. Warehousemen checked the cargoes. Shipbuilders busily repaired ships between voyages. They built new ships. The ship supply stores near the wharves did a big business.

New England Whaling

New England whaling began on the island of Nantucket. Nantucket is just off the coast of Massachusetts.

From the time of the first settlement on Nantucket, all the people knew that their livelihood depended on whaling. Their island was cut off from the mainland. The island soil was too poor for much farming. But the waters around the island were full of whales, and whale oil was valuable.

Whale oil was used in lamps. It was used to grease machinery and to preserve ropes. It was used to finish leather. Whalebone was used to make women's corsets.

As the demand for whale oil rose, Nantucket sailors sailed farther and farther out to sea, searching for the huge creatures. By 1715, Nantucket ships were going on whaling voyages that lasted for two and three years.

These daring Nantucket men were the first whalers to sail the Pacific, in 1791. They also sailed to the coast of Japan, in 1820. Nantucket whaling

ships became known in every harbor of the world.

The year 1843 was the height of Nantucket whaling. That year, some 88 ships from the island were whaling on all the oceans of the world. But after that year, Nantucket whaling declined in importance. Whalers were using larger ships, and a sandbar across Nantucket's harbor made it impossible for the larger ships to come into the harbor. The center of New England whaling shifted to New Bedford. Here was a harbor deep enough for any whaling ship.

Just as Nantucket had done, the entire city of New Bedford lived on whaling. The golden age of whaling lasted from 1825 to 1860. New Bedford led all other cities of the world

in whaling. In 1857, there were 329 ships that sailed from New Bedford. If these vessels had been placed in a line, they would have stretched for ten miles.

More than 12,000 sailors were employed on the ships. Thousands more were employed in New Bedford making rope, harpoons, casks, and other articles used in whaling. The sailors of New Bedford were almost divided into three groups. There were those away on a voyage, those returning, and those getting ready for the next voyage.

Decline in Whaling

One day in 1859, however, something happened that meant the end of whaling. The first oil well was opened in Pennsylvania. From now on, whale oil for candles and for oil lamps would be

New England whalers at work. Dead whales were towed to the ship. The fatty *blubber* was stripped off. Deck workers boiled the blubber for whale oil, then stored the oil in barrels for the voyage home.



less important. People would use oil and kerosene for heat and light.

Another reason for the decline of whaling was the 1849 California gold rush. Crews and officers left the ships and raced to California.

Thirty-four whalers from New Bedford got stuck in the ice near the North Pole in 1871. Most of the ships had to be left there. Thousands of dollars, in ships and cargo, were lost. Many shipowners never recovered.

NEW ENGLAND IDEAS

Rise of Factories

Early in the history of the young nation, there were times when war cut off foreign trade. When England and the United States went to war in 1812, the trading routes were closed. Trade slowed down. Savings that would have been used for ships and cargo now lay idle. Owners of savings looked for new businesses where they might earn profits. They helped to build the first factories. They began to build toll roads. They also built toll canals.

The country entered its first great period of manufacturing. It was helped by people from New England who had ideas and the courage to put these ideas into practice.

Technological Ideas

The Factory System The *factory system* was a new way of processing goods.

In England, cloth making was an old industry. It was divided up among many skilled specialists. There were yarn spinners, weavers, dyers, and other workers. Each group worked in a different place. Each of these groups had its own union or guild. Each guild protected the work and jobs of its craftsmen.

In New England, there were no guilds. There were no old work habits and customs built up around the old skills. In New England people welcomed new ideas. One idea was to put all the steps of cotton-making under one roof. This worked well in New England. In Europe, people called this idea “the American System.”

Eli Whitney and the Cotton Gin Eli Whitney was a New Englander with new ideas. Two of his ideas caused great changes in American life.

In 1793, he invented the cotton gin. This machine cleaned the seeds from cotton. Before this, cotton seeds had to be picked out by hand. This was a slow and tiresome job. But the cotton gin cleaned much more cotton, much more quickly, than humans could.

Eli Whitney and Uniform Parts Eli Whitney had another idea. In 1798, he found a way to produce goods quicker and cheaper. He did it by using uniform parts. He first started using this idea in the production of guns.

In his shop were several machines. Each one produced a different part of the gun. It produced many copies of the part. All these copies were uniform. That is, all the parts of one kind were exactly the same. For instance, one machine made only triggers. All the triggers it produced were exactly alike. Another machine made only gun barrels. All the barrels were exactly alike. Since they were alike, they were interchangeable. If one part, like a trigger, wore out, it was easy to replace.

The different parts of the gun were made to fit together easily. Almost anyone could fit them together. Workers did not have to be skilled craftsmen.

Social Ideas

Legal System New England helped create a legal system for the new na-

tion. A system of laws was important. The laws had to apply equally in all states. If each state had different laws, a newcomer would not be sure what was wrong or right.

Law schools opened in New England. Young men came to these schools from all parts of the new nation. They studied decisions made by courts in all parts of the country. They tried to discover what ideas helped judges decide their cases. What is fair and what is unfair? What is good and what is bad? What is honest and what is dishonest?

The students and professors put court decisions into writing. They explained the big ideas behind each decision. They published these decisions in books. The books have been used ever since by teachers in law schools.

Public Health John Quincy was both mayor of Boston and president of Harvard College. He started the first public-health system. He formed a street-cleaning department in Boston. He also made sure that the city had a clean water supply and a good sewage system.

Prison Reform A New England woman named Dorothea Dix started the first program of prison reform in the United States. She visited prisons and poorhouses. She wrote about the terrible conditions she found in those

places. Because of her work, many improvements were made. The changes were copied in prisons and poorhouses throughout the country.

Abolition of Slavery There were both white and black people in New England who believed that all men were brothers. They hated the slave system. They held big meetings, marched in parades, and gave speeches against slavery.

William Lloyd Garrison published an antislavery newspaper. Harriet Beecher Stowe wrote *Uncle Tom's Cabin*. The book described the cruelty of the slave system. It turned thousands of readers against slavery.

Difficulties Spread Ideas

In the 1840s many European workers came to New England factories. They came from Portugal and Germany.

They came from Ireland, where the potato crop had failed. The potato was the major food of the Irish people. Now they were starving. They left Ireland by the thousands and came to the United States. These people were poor and had few skills. They crowded into the cities and towns of New England. They were willing to work for very low wages. Any wage was better than none. This suited the factory owners fine. They welcomed the immigrants into the factories and they cut the wages even lower.

Native New Englanders Spread Out

The immigrants worked for wages that were lower than the native New Englanders would accept. So the immigrants got most of the factory jobs. The native New Englanders left that part of the country in greater and greater numbers. Farmers left their farms and moved from New England. They were attracted by richer, more spacious land. Where did they go? They went west.

Ideas Go with Them Those who went west took New England with them. As they crossed the country, they founded new towns. They named the towns for those in New England. How many New Hartfords, Fairfields, Springfields, and Salems are scattered across the United States!

The New Englanders took more than their town's name with them. They also carried the ideas of the town meeting and good public schools with them. They took all their technical and social ideas with them. In fact, they carried with them the spirit of New England.

Even today, some towns in the Midwest are built around town squares as they are in New England. Many pretty, white churches with tall spires dot the countryside in the Midwest. Many old houses are built to look like New England homes. Even the streets have old New England names.

Since colonial days, New England has been a leader in the development of American life. In art, literature, music, and politics, New England has helped shape the way we think and act in

this country. New England inventions helped form our industries.

What is the region like today? How do people make their livings there now? What is the future of the region?

NEW ENGLAND TODAY

Farming

Most farmers in New England today are part-time farmers. They live on their farms, but work in town during the winter.

The full-time farmers produce a specialty for the market. In Vermont, most farmers raise chickens. They supply the Boston market. In Aroostook County, Maine, the specialty has been potatoes. Other farmers specialize in making sugar and syrup from the sap of maple trees.

Blueberries grow on the rocky coast of Maine. Cranberries grow in the swamps, or bogs, of Cape Cod. The berry growers make these wastelands useful. The berries are sold to the nation.

Forest Industry

Three-fourths of New England is covered by forests. For many years, they

supplied the wood for New England's homes and ships. But in recent years, the forests have been overcut.

Farmers who own land in New England are often poor. They know little about forest management. Because they need money, they cut trees as soon as they are big enough to sell. If forests are not well managed, trees crowd each other. They do not get enough sun and rain. The forest becomes unhealthy. The forest industry in New England now faces serious problems.

Pulp and Paper Industry

The paper industry is one of the oldest industries in New England. It developed there because of the forests. Most of the trees are softwood. They make good pulpwood for papermaking.

As years passed, the big pulp and paper companies in New England could not compete with companies in the South and Northwest.



Wrapping paper spins onto huge spools in a New England paper mill. Each roll of paper weighs several hundred pounds.

Big thick forests grow in these regions. Electric power is cheap in the Northwest and the South. Pulp and paper companies there have giant machines. They produce paper more cheaply than the New England paper mills.

New England pulp and paper mills were in trouble. Their machines were older. Their forests were thinner.

The New England mills decided to buy wood pulp from Canada. Canada was nearby. It had hundreds of miles of rich forest land. New England mills decided to specialize in high-quality, expensive paper. They were sure that New England and New York City markets could use this high-quality paper. Many books and newspapers in the

United States are published in these areas. Good paper is needed for books. It is also needed for writing paper, envelopes, and business cards. And it is needed for birthday cards and Christmas cards.

Transportation of paper from the New England mills to these large markets is easy and cheap. New England still has a healthy pulp and paper industry.

Fishing

New England fishermen fish mostly in the waters of the Continental Shelf. This is a wide, shallow part of the sea bottom. It lies just off the New England coast. It goes from Newfoundland to Long Island. This is one of the richest



The New England Region

fishing areas in the world. Fishermen from Canada, Portugal, and the Soviet Union also fish off the New England shores.

Since 1950, however, the fishing industry in New England has been going down. In that year, there were 5,900 fishermen fishing in 865 motor ships. They brought in about 500,000 tons of fish.

In 1965, there were only 3,900 fishermen. There were only 700 motor ships. And only about 500 tons of fish were brought into New England ports.

What has happened? The waters are rich in fish. The United States

is a great market for fish. Fish can be shipped easily and quickly to any part of the country. Why did the fishing industry decline?

The answer is that the fish caught by the Canadians are cheaper than those caught by New England fishermen. It costs more for New England fishermen to catch the fish.

The Canadian fishing vessels are newer and more modern. They have better refrigeration on the ships, so they don't have to make so many trips back to port. New England fishermen don't have many modern ships. It costs twice as much to build a ship in the United

States. And there is a United States law that forbids American fishermen from buying vessels from other countries.

But there are still other problems. Fishermen do not know until they land what price they will get for their catch. They don't know how many fish the other fishermen have caught. If everybody catches a lot of fish, the price will probably be low. If fish are scarce, the price will be higher. But fishermen must sell at whatever price they are offered. Because there is little storage space at the docks, the fish will spoil quickly. So fishermen are forced to sell. Otherwise they may lose their entire catch.

The New England fishing industry does not have a bright future. Some people feel that the government should help the fishermen cut the cost of fishing. They feel that the fisherman should get a higher income. The government already helps farmers, wool growers, and oil companies to earn higher incomes. "Why not help the fishing industry too?" they ask.

Shipbuilding

Shipbuilding is an old industry in New England. It was a good region for shipbuilding to develop. The most important raw material was lumber. It could be found near the ocean. Ships could be built near the place they would sail from.

Shipbuilding and trading in ships brought wealth to New England. The profits helped build factories later on. But today, shipbuilding is not a strong industry in New England. Its days of wealth and glory may be gone for good.

Few passenger or cargo ships are being built now in the United States. It costs too much. It costs two or three times more than in Europe or Japan.

In New England, almost all the shipbuilding and repairing is done for the United States Navy. The work in these shipyards depends on how the lawmakers in Congress feel about government spending. If the lawmakers want to save the taxpayers' money, there is little shipbuilding done for the navy. If the world looks peaceful, fewer ships are built.

The shipyards in Connecticut build nuclear submarines. They also build deep-diving ships for the navy. Such ships are also used by telephone companies when they inspect the telephone cables that lie across the bottom of the ocean. The Connecticut shipyards hope to build more and more ships for ocean study.

Ocean research has led to a new industry in New England. The new industry makes instruments and equipment for research ships. Exploring for minerals in the ocean should increase, and the new industry should grow.



Nuclear submarines like this one can stay underwater for months. They are used for defense, ocean exploration, and research.

This industry has also developed in the South because there are many offshore oil wells there. But although it is growing faster in the South, ocean exploration will continue to grow in the New England area.

Shoe Industry

In the days just after the Revolutionary War, a shoemaker named Dagys lived and worked in Lynn, Massachusetts. He ordered fine shoes from France and England. He did not buy them to sell. He wanted to study them. He took them apart. From them, he learned how to make fine-quality shoes. He divided the labor of shoemaking. No one person would make an entire shoe. He taught some workers how to make one part of the shoe. He taught other workers how

to make a different part of the shoe. He gave them leather. Then each produced his part of the shoe at home. When they all finished, they brought the parts back to the shop. There, they were put together. In this way, more shoes could be made faster. These shoes were sent to markets in Boston and elsewhere.

The shoe industry was a big business in New England for a long time. Almost all the shoes in the United States were once produced there. Shoes were a necessity. People bought them whether they earned high or low incomes. The industry prospered.

Then something hurt the New England shoe industry. As cities grew up across the United States, the market for shoes moved away from New England. Some of the market moved toward the center of the country.

Businessmen started new shoe factories in the Midwest. The latest machines went into the new factories. They used the newest ways of producing shoes. The new machines and new ideas helped businessmen to cut the cost of shoe production. They were able to sell shoes at a lower price than the older shoe factories in New England.

There was more bad news for the New England shoe factories. Wages in the towns around Boston rose. New kinds of industries moved in. They offered higher wages to get workers. This pushed wages up in the shoe in-

dustry, too. This, in turn, pushed up the price of New England shoes. Now the shoe factories could not compete with shoe factories in other parts of the country and in foreign countries. Many of the big, old, shoe factories had to close.

Even so, one out of every three pairs of shoes made in the United States is still produced in New England. How has the shoe industry remained strong here in spite of the stiff competition from other parts of the country?

- Shoe machinery costs a lot of money. Small shoe factories usually cannot afford it. It is possible, however, to rent shoe machinery. This permits small factories to use the newest machines. They rent them.
- There are still many good, skilled shoe workers in New England. They produce high-quality shoes.
- Companies in New England can supply shoe factories with shoe parts. They produce heels, laces, eyelets, thread, nails, and dozens of other parts.
- New England is still the center of shoe design and fashion. It sets the styles for women's shoes all over the United States.

Textile Industry

For about 150 years, the cotton textile industry prospered in New England. The industry in the United States began there. Rivers offered cheap power

for machines. Children and young people came from the farms to work in the mills. Immigrants came from Europe to work there also.

Then, in the 1930s, cotton mills in the region began to close. People were out of jobs and could not find other work. There used to be some 12,000 people in Lowell working in the cotton mills. By 1936, only 3,000 worked in the mills. What had happened?

First of all, there was an economic depression in the 1930s. Business was bad in most parts of the country. People had no jobs and could not find any. Also textile mills were moving out of New England. They were moving south.

The New England states had laws limiting the number of hours a worker could work. Some laws told employers they could not pay wages lower than a certain amount. Some laws made the companies insure workers against accidents on the job. The Southern states, however, had few such laws.

There were other reasons that caused New England cotton mills to close. The Southern cotton mills were newer and faster. New work methods were used. Some New England mill owners bought mills in the South. They did not try to modernize their Northern mills. Other New England mill owners felt that they couldn't compete with the new mills.

Then, synthetic fibers were developed. Mills for synthetic cloth were

built in the South. The South successfully competed against New England with synthetic cloth.

Cotton mills are still closing in New England today. Between 1960 and 1965, three out of five cotton workers lost their jobs.

Wool Industry

New England's wool textile industry has changed also. Many woolen mills

were built in New England in the 1840s. When the Civil War came, the government needed many blankets and warm uniforms for its soldiers. They ordered the material from New England mills.

Today, however, the large woolen mills have left New England. Some have closed. The owners could no longer make enough money to keep the mills open. Some have moved to take advantage of the lower wages of the South.

KEEPING NEW ENGLAND UP TO DATE

New England no longer tries to be a big textile producer. It does not try to lead in shoe production. If it had tried, it would be one of the poorest regions of the United States. Competition from other parts of the country would have cut New England's sales and income way down. Instead, the region has developed other resources.

Human Resources

New England has developed its human resources. The people of New England have always respected knowledge. They have valued education. This is why the region is able to keep up to date. New England colleges and universities are among the best in the world.

Machinery and Machine Tools

New England produces many kinds of machines. Office machines, textile machines, rollers, and many other machines.

New England also manufactures *machine tools*. Machine tools are power-driven tools that can shape metal into thousands of useful products. They can press, cut, drill, grind, and shave metal. The tools are of different sizes. They may be combined to do complicated work.

The machine-tool industry is a small one. In all the United States, there are only about 300 machine-tool compa-

nies. But giant industries could not exist without the little machine-tool companies. These companies are the key to America's ability to produce large amounts of factory goods.

But the machine industry and the machine-tool industry have one problem. They are both shaken by the ups and downs of other businesses. If factories sell their goods well, factory owners think that their business will go on growing. They replace their old machines with faster and bigger ones. Then the machinery industry and the machine-tool companies are busy. They earn high profits.

Suppose, however, the sale of goods is not going well. Then factory owners are uneasy about the future. They decide not to enlarge their businesses. They do not replace the old machinery. This slows down the business of the two industries. They lay off their workers. Some even close down.

Even so, the machine and machine-tool industries in New England have a good future. The population of the country is growing. More goods will be needed and produced. This creates more jobs and income. As people's income rises, they want new and better goods. There will be a great demand for goods to be produced. The machine and machine-tool industries will prosper.

Airplane Parts

Machine-tool workers started the airplane industry. In the 1920s, the United States government wanted air-cooled airplane engines. It knew that around Hartford, Connecticut, there were many skilled machine-tool workers. The government placed an order for engines with the Pratt and Whitney Manufacturing Company. This company had been making guns and precision tools since before the Civil War.

Since 1925, the company has been manufacturing airplane engines. It is one of the biggest manufacturers in the world. Pratt and Whitney also sells engines to foreign airlines. Most of the world's airmail planes use Pratt and Whitney engines. Today, Pratt and Whitney is a division of United Aircraft Corporation.

In the 1920s, the government asked the General Electric Company to experiment with jet engines in airplanes. During World War II, General Electric began to look for a place to produce a lot of engines.

The people of Lynn, Massachusetts, wanted the new industry in their city. Lynn had once been a shoe center. But many shoe factories had closed. People in Lynn needed jobs. Many of them were skilled workers. Nearby was Boston, where even more engineers and

craftsmen lived. They would be able to help produce jet engines. General Electric put the industry in Lynn.

The demand for airplanes and aircraft engines depends very much on government orders. Government orders can be turned on or off like a faucet. This causes uncertainty in both jobs and income. Communities depending on these industries suffer. This is why some jet-engine companies like to produce other products as well. For example, United Aircraft Corporation helped develop fast trains between Boston and New York.

Electronics Industry

An *electron* is a tiny piece of an atom. It is the smallest known bit of matter. Millions of electrons would fit into a needle's eye. Nevertheless, electrons

are the basis of one of the most important industries in the United States—the electronics industry.

We call electrons “electricity.” For many years, streams of electrons flowing over copper wires have lighted our houses. They have cooked our food and driven the machines in factories.

Scientists found that electrons could be directed through vacuum tubes. They then carry sound over long distances. Radio broadcasting developed from these discoveries. Since then, scientists have found new ways to use electrons and electron tubes.

One new invention is the transistor. A transistor works like a vacuum tube. But it is much smaller. In electronics, the smaller a part is, the better. Computers, space satellites, radios, and other devices use transistors.



In Waltham, Massachusetts, an old watch factory was turned into an electronics factory. Those who had worked with tiny watch parts now work with tiny electronic parts.

In Lawrence, Massachusetts, the Telstar satellite was developed. The Trans-Atlantic Telephoto System was also developed in Lawrence.

The electronic parts are sent to factories all over the country. There they are used to produce other electronic goods.

Uneven Development

The growth of business and income is not spread evenly through the whole region. There is a gap between the north and the south. Southern New England is richer than northern New England.

Experts say that this gap will get bigger. They say that by 1980, 80 out of every 100 New Englanders will live in the southern part. This part will be crowded and prosperous. The people there will have good jobs and incomes.

Those in the north will have few choices in ways to earn a living. But they will live in the beautiful mountains and forests of northern New England. Many do not want to leave the countryside where they grew up. They don't want to leave the home of their fathers and grandfathers.

Northern New England is far from markets. Transportation to markets is not good. Northern New England lacks good schools to train people for new kinds of work.

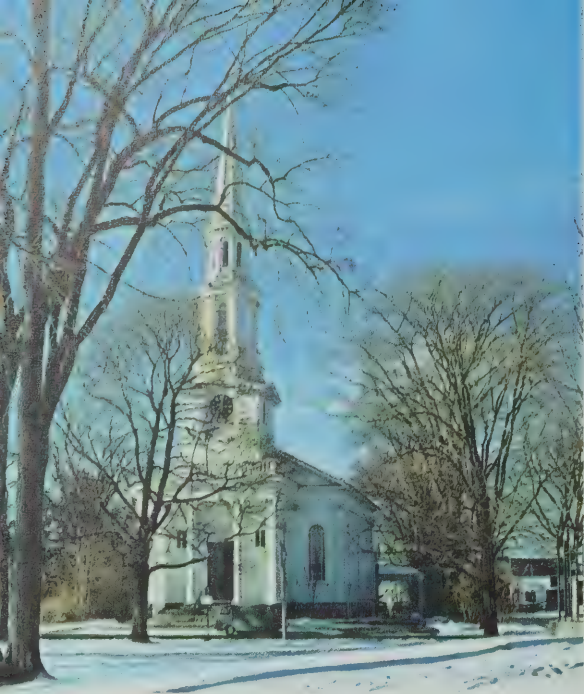
People in the south have learned skills from the textile industries, shoe industries, and machine-manufacturing industry. There is little savings in northern New England. There is not enough electric power. Electric power is expensive there. This kind of situation keeps new businesses from settling in northern New England.

A Research Company Views the Future

The Arthur D. Little Company studies the problems of governments, businesses, and other organizations. It gathers information and then advises an organization on the best ways to solve its problems.

The Arthur D. Little Company studied the New England region for several years. Then it made some recommendations.

- Schools should be built in the north. Vacant textile factories could serve as college buildings.
- Schools for adults should also be built. These would train older people for new trades and skills.
- Some of the old mills should become historical monuments. There are



A village church in New England. Tall-spired old churches like this are part of the beauty of the region.

old flour mills, textile mills, and water-power sites. They would show visitors how the industry and jobs of Americans have developed in the past 200 years.

- The beauty of New England should be protected by developing new state parks and national forests. New England's rivers should be stocked with fish. This would create new recreational areas.
- The state governments of New England and the federal government should make new land-use maps. These maps would show how the land in different parts of the region could best be used.

Many small towns in New England are too small to pay for good government services. Specialists recommend that these towns cooperate in solving their problems. Together they might contribute money to build and care for roads. They might build community hospitals, schools, and homes for the elderly.

Regions, like humans, start young and vigorous. They grow up. They grow old. But regions, like people, can stay young by keeping up with the times. This requires a brave spirit and a mind that will adapt to change. New England has the spirit. Its people are skilled and creative. So this old region should continue to be a leading region of the United States.

Test Yourself

1. How did the geography of New England contribute to its early prosperity?
2. In what ways did England try to limit the colonists' trade?
3. Name some of the inventions which helped the growth of the cloth industry in New England.
4. What are some of the reasons why the textile industry has been leaving New England for the South?
5. Why is southern New England richer than northern New England?

NEW INDUSTRY IN AN OLD CITY



Lynn, Massachusetts, is a city of about 90,000 people. It stands on the shore of Boston Bay.

Once, Lynn was very well known. It was famous for the shoes that were made there. During the 1800s, a great many of the shoes worn in the United States came from Lynn.

The shoe industry in Lynn began around the time of the Revolutionary War. Workers in small factories called *tanneries* prepared leather to be made into shoes. They cut the leather into the shapes for the top and bottom parts.

These parts went to shoemakers in small backyard shops (1). These men were skilled craftsmen who sewed and nailed the parts together to make shoes. They also attached buttons, or made holes for shoestrings.

The Lynn shoemakers were good at their work. Their shoes were popular. Soon, there were backyard shoe shops all over Lynn. But the country was growing fast. More and more people needed shoes. By the middle 1800s, the small shops could not meet this demand. So bigger shoe factories were built in Lynn.

These factories employed many more workers than the small shops. Also, workers began to *specialize*. Each shoemaker worked on only one part of the shoe. For instance, in a *bottoming* room (2) workers put the soles and heels on shoes. They did nothing else. Bottoming was their specialty.

As the demand for shoes increased, larger factories were built. Workers made shoes on huge assembly lines. Hundreds of people worked on each floor of these factories (3). Many of the workers were women.

By 1910, Lynn was a large, prosperous town (4). People all over the country bought shoes from Lynn. It became known as "The Shoe City of the World."

But then something happened. The shoe industry began to decline. Shoes could be made more cheaply in other parts of this country. Shoes imported from other countries took over part of the market. One by one, the big shoe factories in Lynn closed up or moved away. Today, the shoe industry has almost disappeared from Lynn.

At first, the decline of the shoe industry caused much hardship and unemployment. But Lynn was lucky. A new industry was growing there.

In the years before World War II, the General Electric Company built a small plant in Lynn (5). When the war came, the plant began to make jet engines for airplanes. The engine for the first jet in the United States was built there in 1942.





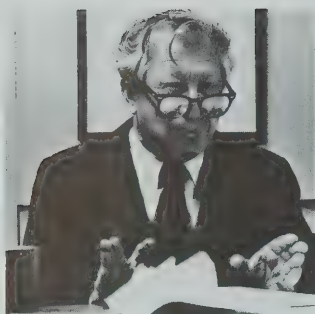
Jet planes did not see much action in the war. They were too new and untried. But after the war the jet industry boomed. Today, General Electric's Lynn plant makes hundreds of small jet engines (6). They are used in private business jets like the Lear Jet. They are used in jet helicopters. And the Air Force uses them in its supersonic T-38 trainer planes (7).

The General Electric Company now operates three plants in the Lynn area. These plants employ more than 14,000 people. Lynn is no longer "The Shoe City of the World." But it is prosperous once again.



WHAT DID YOU LEARN?

1. Both New England and Appalachia began as farming areas. Why did people of the two areas move into other occupations?
2. When the demand for whale oil dropped, many New Englanders were out of work. When the demand for coal decreased, many miners in Appalachia lost their jobs. How did each region deal with its problem? In which region do you think it was easier for men to change their occupations? Why?
3. New England has managed to keep up with changes in science and technology. This is not true of most of Appalachia. What do you think are the reasons for this? Why is it sometimes harder for some regions to keep up to date than for others?
4. Why do you think that people who live in one region should be concerned about problems in other regions?
5. What is meant by the statement that wealth attracts more wealth?
6. Many industries begin in one part of the country and then move to another. Try to think of as many reasons as you can why industries might change their location.
7. A famous American once made this statement: "New England is not just a place to live; it's a way of life." What do you think he meant?
8. New England attracts many tourists each year. Most of them come to visit historic places such as Plymouth Rock and old whaling villages. Some people think that the Appalachian area should remain a "living museum." From what you have read about Appalachia, what do you think might interest tourists there?
9. Earlier in your text you learned about ways in which man has been able to change natural regions. In what ways do you think man can change the Appalachian region to make it a better place to live?

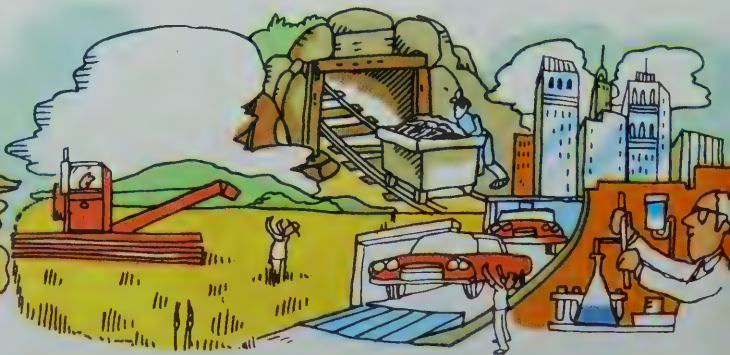
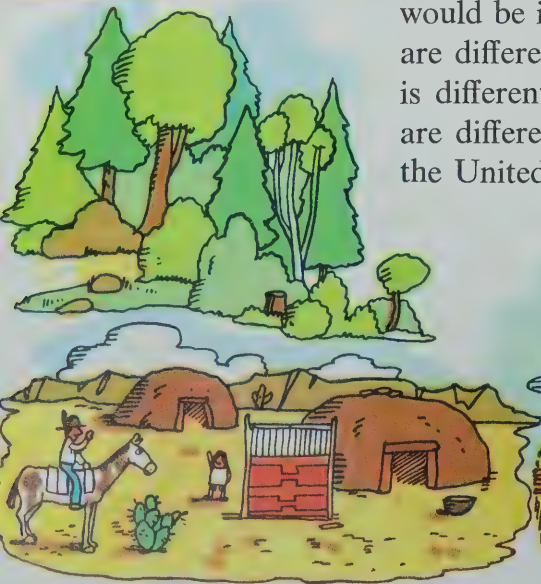


A LETTER TO YOU

Dear School Friends:

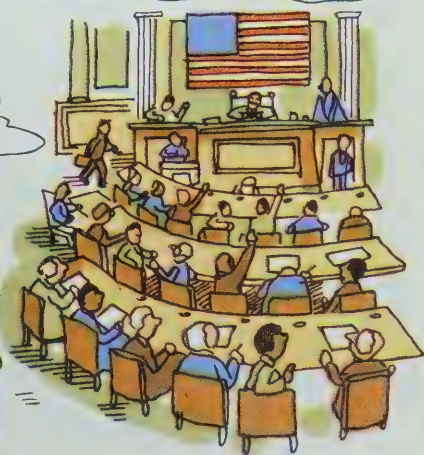
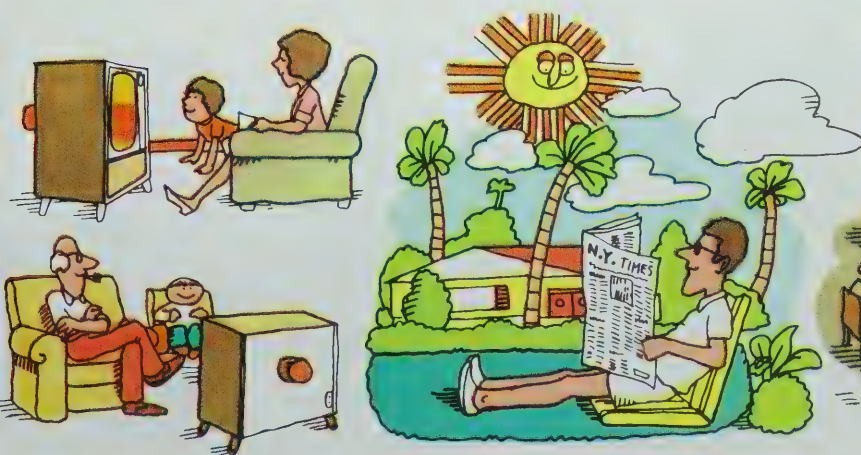
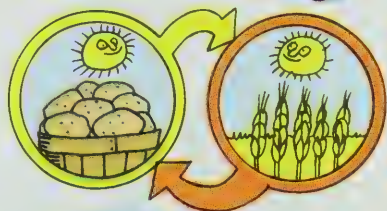
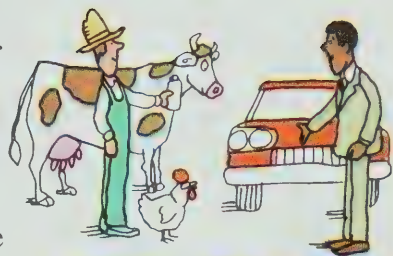
I have traveled in all the regions described in this book. I wanted to see them for myself. I walked on country roads and city streets. I have seen fields of wheat that stretched as far as the eye could see. I have wandered down the deserted streets of ghost towns in the mining areas of the Rockies.

I have talked with the people who live and work in these regions. They spoke of their concern for their regions. I have taken you along the same path I traveled. I wanted you to meet the Navahos of Arizona and the farmers of the Great Plains. I wanted you to meet the coal miners of Appalachia, the scientists of Massachusetts, and the manufacturers of Detroit. I hope you have discovered how beautiful and exciting this country is. How could it be anything but exciting? It has so many differences. How dull and boring it would be if everything were the same! The landscapes are different. The people are different. Their work is different. Their customs are different. Their beliefs are different. Together these differences make up the United States of America.



These differences helped make the United States rich. Dairy products from Wisconsin are traded for cars from Detroit. Kansas wheat is traded for Alabama peanuts. This trading goes on all the time. Thousands of goods are traded between the regions.

It is not only goods that are traded. People also trade ideas. The Spanish-style houses of California are found in New York State too. The way New England was governed has been copied and used in other parts of the country. People of Los Angeles buy *The New York Times*. People of New York watch movies and television shows made in Hollywood. Television and radio carry new ideas to little towns in Mississippi and Idaho. There are so many people with so many ideas! People are free to have ideas of their own. People are free to trade these ideas. People are willing to put these ideas to work. This is why the country is the richest in the world.



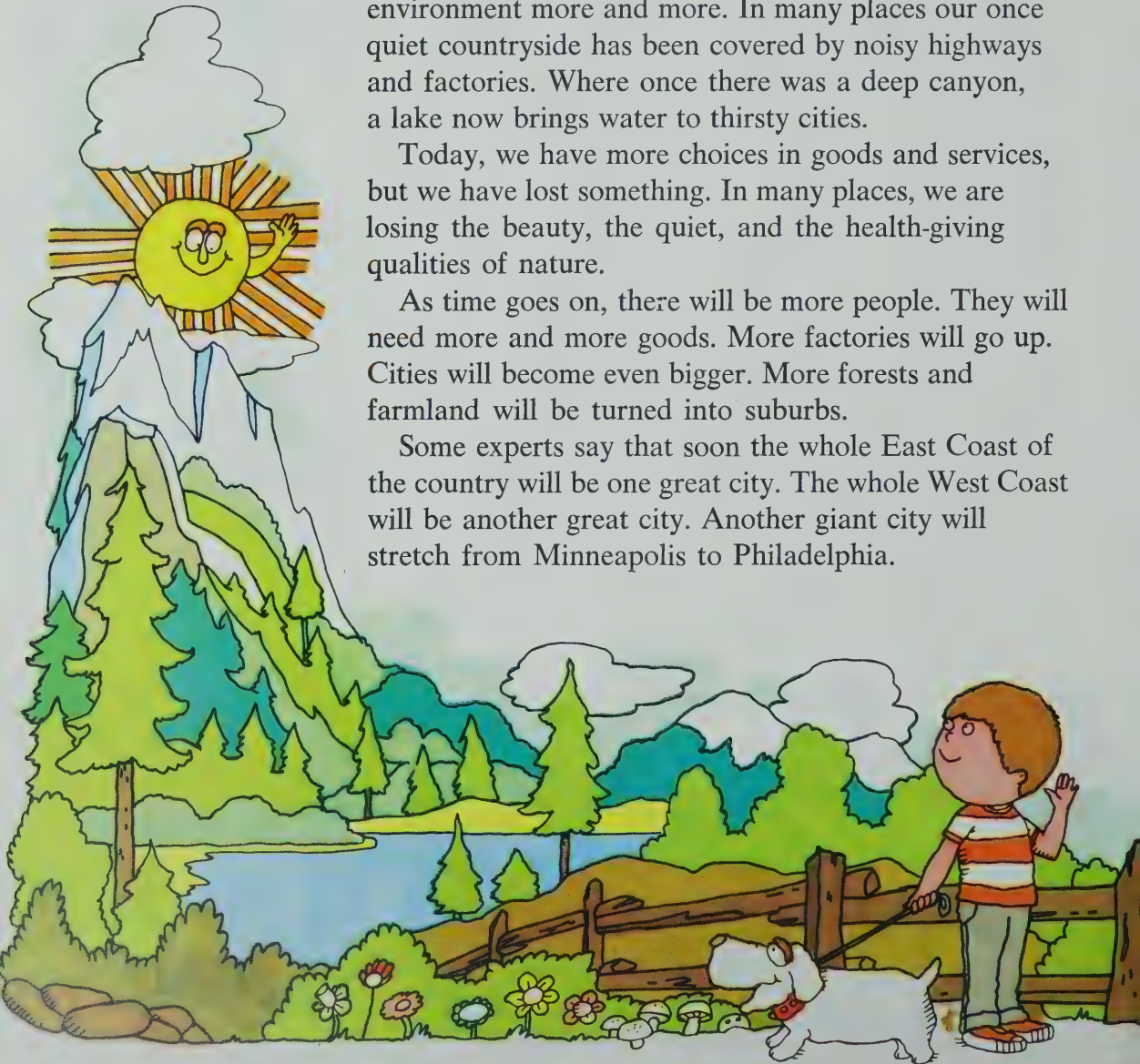
No other country has so many goods and services to choose from. In no other country have people so many choices of jobs. We pay for all these goods and services from our incomes. But we are paying for them with more than income.

As we produce more and more, we change our environment more and more. In many places our once quiet countryside has been covered by noisy highways and factories. Where once there was a deep canyon, a lake now brings water to thirsty cities.

Today, we have more choices in goods and services, but we have lost something. In many places, we are losing the beauty, the quiet, and the health-giving qualities of nature.

As time goes on, there will be more people. They will need more and more goods. More factories will go up. Cities will become even bigger. More forests and farmland will be turned into suburbs.

Some experts say that soon the whole East Coast of the country will be one great city. The whole West Coast will be another great city. Another giant city will stretch from Minneapolis to Philadelphia.



Once we said proudly that we were conquering nature. But today we wonder if we haven't gone too far. Even with all our goods, would we be happy if we destroyed our surroundings? Would we not miss clean air, pure water, and green fields?

Now you have come to the end of the book. I would like to ask one favor. Let the end be a beginning. Please begin on your own to observe the region around you. Study its past. What did nature give your region? Has man's work changed it for the better or for the worse?

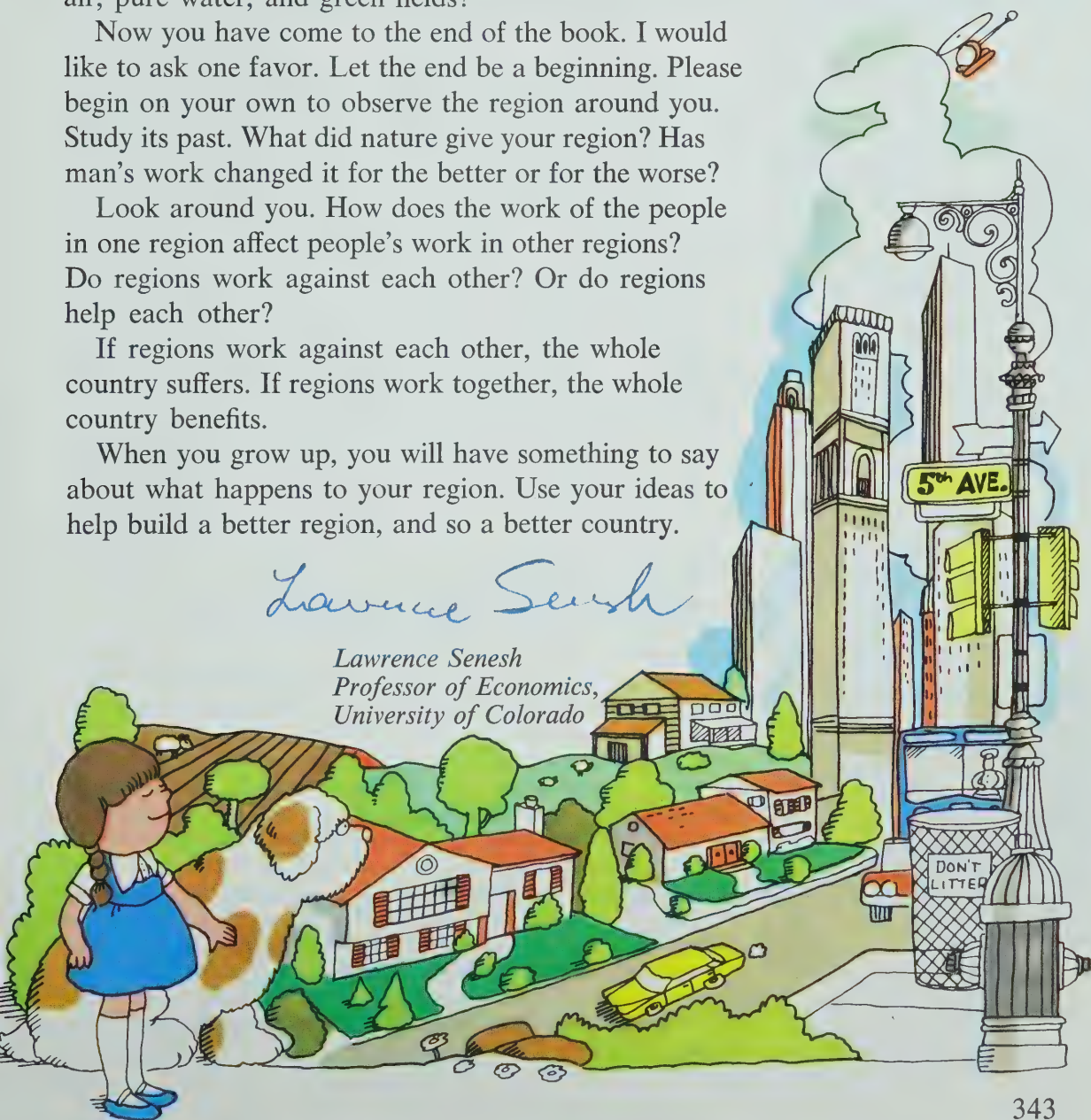
Look around you. How does the work of the people in one region affect people's work in other regions? Do regions work against each other? Or do regions help each other?

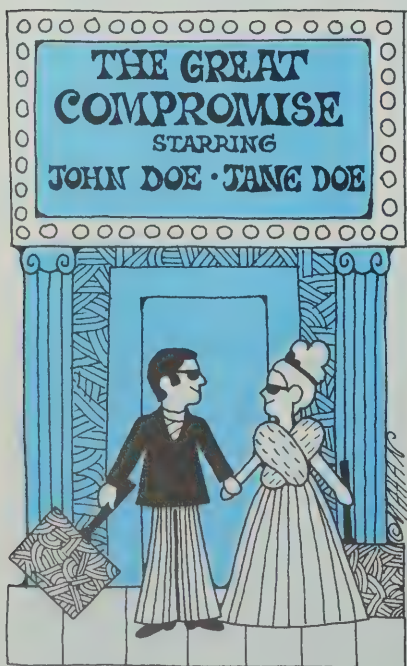
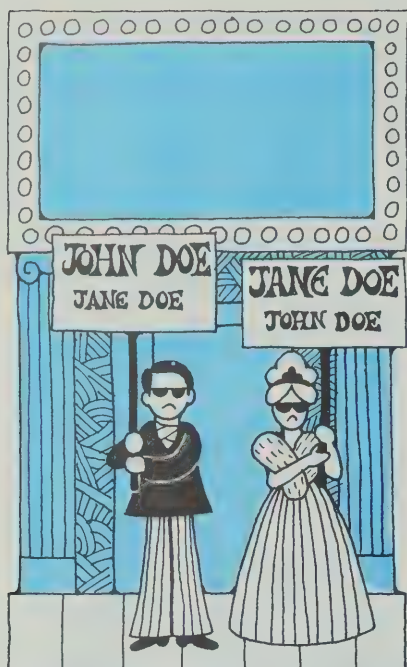
If regions work against each other, the whole country suffers. If regions work together, the whole country benefits.

When you grow up, you will have something to say about what happens to your region. Use your ideas to help build a better region, and so a better country.

Lawrence Senesh

*Lawrence Senesh
Professor of Economics,
University of Colorado*





compromise

IDEAS TO REMEMBER

abolitionist — A person who wants to do away with or abolish something.

absentee owners — People who do not live near the property they own and do not often visit it.

aerospace industry — A group of companies that make instruments and vehicles for flights into space.

alfalfa — A plant used to feed cattle and horses.

amendment — A change in a law.

arid — Dry and lifeless.

boundary — A real or imaginary line that separates regions.

by-product — Anything that is produced in the making of something else. For example, sawdust is a by-product of making boards.

capital — Money or property needed by a person or a company to carry on a business.

ceramics — The art of making objects out of clay; also the objects so made.

ceremony — An action or series of actions established by custom for special occasions.

climate — The kind of weather a region has, including the temperature, the rainfall, and the strength and direction of the winds.

close family — A family that includes mother, father, and children.

compromise — The settlement of an argument by each side giving up part of its demands.

contract labor — Work performed under a signed agreement stating the wages and the length of the work period.

cooperatives — A community that is owned and operated by all the members. They all produce and market goods and share in the benefits.

cultural region — A region where most people speak, think, and act alike.

culture — The way people act, think, and live. Sometimes the word *culture* is used to mean artistic activity in music, painting, literature, and sculpture.

delta — A deposit of sand and soil in the shape of a triangle, usually deposited at the mouths of rivers.

drought — A long period of dry weather.

durable goods — Those goods which do not wear out quickly, such as furniture and refrigerators.

electron — A tiny bit of electrical energy that forms part of an atom.

emigration — Leaving one's own country to settle in another.

entrepreneur — A person who takes the risk of starting a business in the hope of earning a profit.

executive branch — That branch of government which enforces the law; for example, the president or governor and his staff.

extended family — A family that includes mother, father, children, grandparents, aunts, uncles, and cousins.

fabricating — A type of manufacturing in which the raw material is greatly changed, as when cotton fiber is turned into a shirt.

factory — A building or buildings in which manufacturing takes place.

factory system — A method of producing goods in which all steps of production were done under one roof. In Europe this was called the American system.

fallow land — Land that has been left unplanted so that it can rest and enrich itself.

federal government — The government of the United States, which consists of the President, the Supreme Court, and the Congress (the Senate and the House of Representatives).

geologist — A specialist in the study of the physical features of the earth, such as rock formations.

green belt — An area of land that is left in its natural state, usually around a city.

homestead — Land sold at a very low price to those who will make a home there and improve the land.

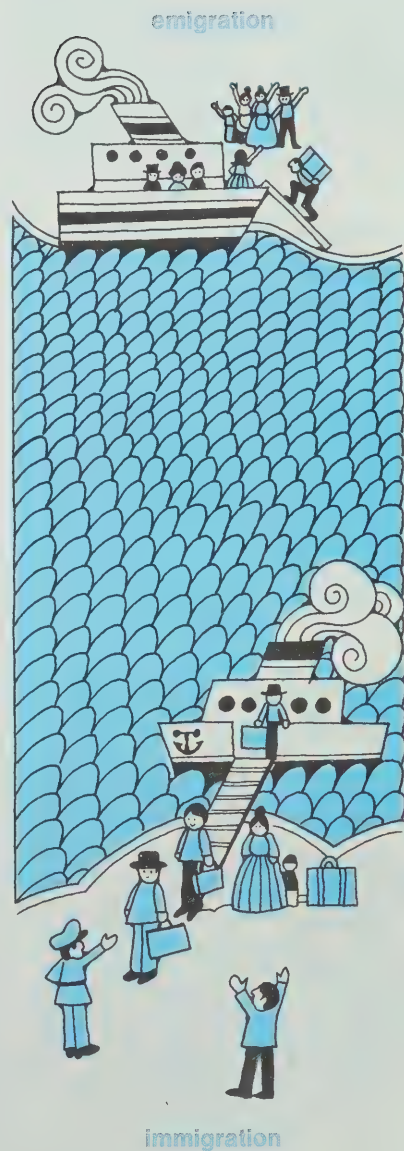
immigration — Coming into a foreign country or region to live.

indentured servants — People who agreed to work for a period of time in return for passage to America.

industry — A business that produces goods or provides services.

initiative — In politics, the right of the people to make up bills for the government of a state to consider.

international waters — Those waters which are considered free for all nations to use.





inventions — New things that are thought of or made.

irrigation — Supplying water to dry land by means of ditches, pipes, or canals.

judicial branch — The branch of government that interprets the law (the courts).

kapu — Those acts which were forbidden in the old Hawaiian way of life.

legislative branch — The lawmaking branch of government; for example, the U.S. Congress or the state legislature.

lode mining — A method of mining in which the ore is drilled and blasted from an underground deposit.

machine tools — Power-driven tools that can shape metal into different parts for machines.

man-made region — A region made by man's work, such as a manufacturing region.

manufacturing — Turning raw materials into finished goods by the use of men and machines.

market — The contact between buyers and sellers for the purpose of exchanging goods and services.

migration — The movement of people from one country or region to another.

minerals — Resources of nature such as iron ore and coal.

minority culture — The culture held by less than half of the people in one community.

natural gas — A gas formed by nature inside the earth. It is used for cooking and heating.

natural region — A region made by the actions of nature, such as a desert region.

natural resources — Materials produced by nature, such as oil, gold, and forests.

nondurable goods — Goods that are used up quickly, such as ice cream and soap.

nonrenewable resource — A resource that nature cannot replace, such as gold.

ore — The rock in which minerals are found.

permafrost — Land, usually on the tundra, that is permanently frozen solid.

petrochemical industry — An industry that produces goods made of petroleum and chemicals.

placer mining — A method of mining in which running water is used to separate ore-bearing rock from other materials.

plantation — A large farm where crops such as cotton, tobacco, and sugar are grown.



markets

pollute — To make water and air unclean and to damage land.

processing — A type of manufacturing in which the raw material is not changed very much, as when fruits and vegetables are frozen.

proclamation — An announcement by a government official.

raw materials — Products of nature that can be made into something else. For example, the raw material wheat can be turned into flour or breakfast cereal.

Reconstruction — The years (1865–1877) after the Civil War when the North tried to change the Southern way of life.

referendum — The right of the people to vote directly — not through their representatives — for or against a bill.

refine — To separate a mineral from its ore.

region — An area with the parts alike in one or more ways.

renewable resource — A resource that nature can replace, such as water.

reservation — An area of public land set aside for some special use, such as Indian reservations.

semiarid — Dry part of the time.

shareholder — A person who owns a part or share of a company.

silt — Tiny bits of soil or sand floating in water or deposited by water.

smelter — The furnace in which ores are refined.

social capital — All those things that a government builds with tax money, such as roads, airports, and schools.

sorghum — A plant with a sweet, juicy stalk.

special-interest group — A group of people who share the same ideas and goals, often of a political nature.

specialize — To do one kind of work instead of doing several kinds.

subregion — A part of a region.

subsystem — One of the parts of a parent system, as veins and arteries are subsystems of the human body.

synthetic — Made by human skill, not by nature.

system — An organization made up of many working parts, such as the human body.

textile mill — A mill where thread is woven into cloth by machines.

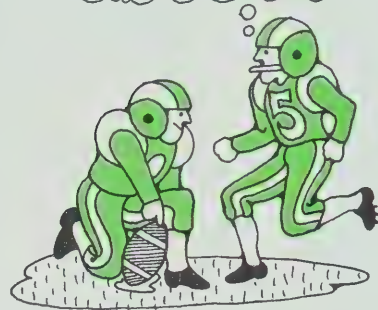
tidewater — The land near enough to a coast so that its rivers are affected by the ocean tides.

tundra — A flat, treeless land in the Arctic.

uniform parts — Parts that are exactly the same size and shape and therefore can be replaced easily.

veto — The right of an official to refuse to sign a bill.

I KICK FIELD GOALS



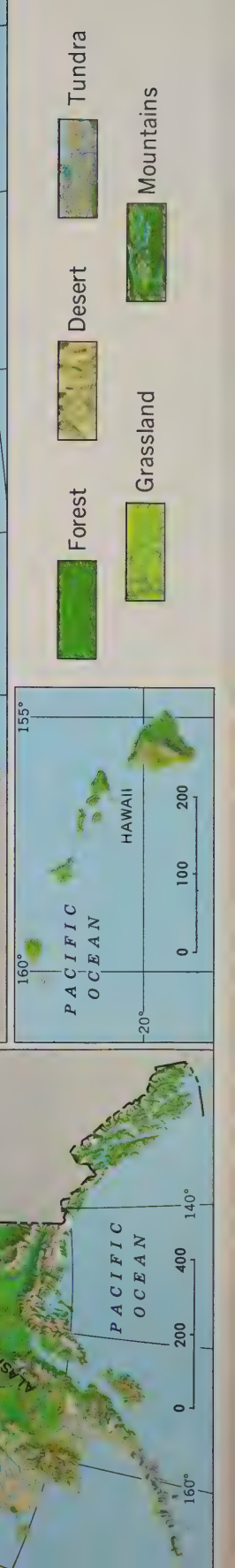
I THROW PASSES



I CATCH PASSES



specialize

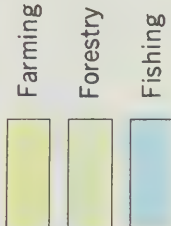
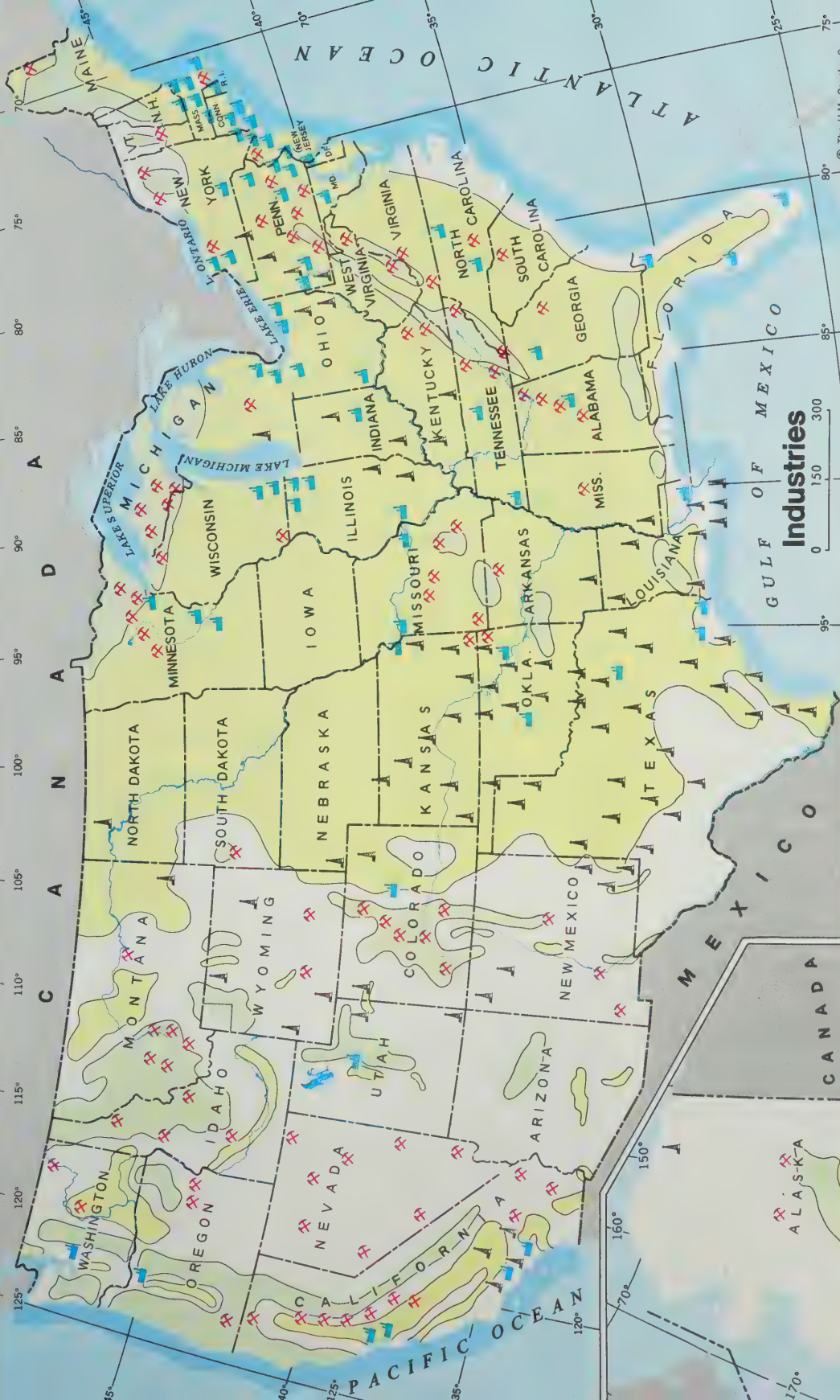


Natural Environment



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